The non-Pama-Nyungan languages of northern Australia: comparative studies of the continent's most linguistically complex region

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The non-Pama-Nyungan languages of northern Australia: comparative studies of the continent's most linguistically complex region

edited by
Nicholas Evans

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The cover painting, from the painting 'Kin (Talking Relations)' by Lofty Bardayal Nadjamerrek, depicts a a family group comprising two sisters with their husbands (the couples on the right), the middle woman being mothers to the male on the far left. Kure ngarre walem nabininjkobeng ngalbininjkobeng, 'Let's travel south together!' says the middle man to his wife in Kunwinjku. The artist's permission to reproduce here is gratefully acknowledged.

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Abbreviations

Language abbreviations used throughout this volume.

B	Burarra	N	Nungali
Bd	Bardi	Ndj	Ndjebbana
BGW	Bininj Gun-wok	Ng	Ngaliwurru
Bi	Binbinka	Ngal	Ngalak(g)an
Bu	Bularnu	Ngan	Ngandi
D	Dalabon	Ngb	Ngumbarl
EG	Eastern Garrwa	Ngk	Ngan'gikurunggurr dialect
ENN	Eastern Nyulnyulan	Ngr	Ngarinyin
G	Gurr-goni (Chapter 13)	Ngty	Ngan'gityemerri
	Garrwa (Chapter 14)	Ngw	Ngan'giwumirri dialect
Gaag	Gaagudju	Nkr	Na-kara
GN	Gunwinyguan	Nm	Nimanburru
Gr	Gurindji	Nn	Ngarnga
Gu	Gudanji	NN	Nyulnyulan
J	Jaminjung	Nnl	Nyulnyul
Ja	Jawoyn	nonPN	non-Pama-Nyungan
Ji	Jingulu	Nrn	Ngarnga
Jj	Jabirrjabirr	Nu	Nunggubuyu
Jk	Jukun	Ny	Nyangumarta
Jr	Jaru	Nyk	Nyikina
Jw	Jawi	pA	Proto Australian
K	Kunwinyku	pArn	Proto Arnhem
Kj	Karajarri	pED	Proto Eastern Daly
Kk	Kukatja	pENN	Proto Eastern Nyulnyulan
Kung	Kungarakany	pGN	Proto Gunwinyguan
Kunp	Kunparlang	pMan	Proto Maningrida
M	Mangarrayi	PN	Pama-Nyungan
Marr	Marra	pNgty	Proto Ngan.gityemeri
Mma	Marramaninjsji	pNN	Proto Nyulnyulan
Mng	Marringarr	pNuPN	Proto Nuclear Pama-Nyungan
Mp	Murrinh-patha	pPN	Proto Pama-Nyungan
Mth	Marrithiyel	pSD	Proto Southern Daly

pWNN	Proto Western Nyulnyulan	WG	Western Garrwa
R	Rembarrnga	Wk	Wakaya
SD	Southern Daly	Wl	Walma(t)jarri
U	Uwinymirr	Wm	Wambaya
Ug	Unggumi	WNN	Western Nyulnyulan
Uw	Uwinymil	Wrl	Warluwarra
W	Warray	Ww	Warrwa
Wa	Wanyi	Yn	Yanyuwa
Wag	Wagiman	Yj	Yinjilanji
Warn	Warndarrang	Yw	Yawuru

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1 *Introduction: Comparative non-Pama-Nyungan and Australian historical linguistics*

NICHOLAS EVANS

The present volume brings together detailed comparative work on a number of non-Pama-Nyungan languages of Northern Australia, and is the first book-length study to span this linguistically complex region, containing as it does perhaps 90% of Australia's linguo-genetic diversity in an eighth of its land area. Many papers originated at a workshop held at the 1989 Australian Linguistics Society conference at Monash University, but several have been written specially for this volume. It has been said that no language changes faster than a proto-language, and in the intervening period a great deal of new descriptive data on non-Pama-Nyungan languages has accumulated, as well as careful sifting of complex data, which has led many of the authors to completely revise or develop their arguments since the original workshop. Hence, the delay in the appearance of the volume reflects some major shifts in position on the part of some authors.

In the first part of this introduction I identify what I see as the main issues in comparative non-Pama-Nyungan studies. In the second to fourth parts I look at issues of subgrouping, reconstruction and areal influence that pertain to particular non-Pama-Nyungan families or subregions. In the fifth part I return to the issue of whether one can carry the process of reconstruction back to deeper levels than the families themselves, that is back to some level from which all or most non-Pama-Nyungan families are descended. Since many of the papers are relevant to several of the above issues, I integrate references to them throughout this introduction, rather than dealing with them sequentially.

1 Comparative non-Pama-Nyungan and comparative Australian

The timing of this volume reflects a swing back to the incorporation of non-Pama-Nyungan material into comparative Australian linguistics. The view of comparative Australian expounded in Dixon's 1980 *The languages of Australia*, which has been taken as

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the orthodox position for the last two decades,[1] is dominated by data from Pama-Nyungan languages. This was understandable given the paucity of detailed grammatical materials available on non-Pama-Nyungan languages at the time, and the excitement generated by a string of brilliant grammars of Pama-Nyungan languages that had been barely known before the 1970s. A similar Pama-Nyungan focus was reflected in the first four volumes of the influential *Handbook of Australian languages* series; until the fifth volume (published in 2000) all grammars contained therein were Pama-Nyungan, apart from Crowley and Dixon's (1981) evaluation of Tasmanian and Keen's (1983) grammar of Yukulta, which was then believed to be Pama-Nyungan and in any case belongs to one of the groups, Tangkic, that is closest to Pama-Nyungan.

In contrast, grammars of non-Pama-Nyungan languages coming up to modern standards of description[2] were mostly later in coming. The bulk of them did not appear until the last fifteen years, with many others still forthcoming or in preparation, and until these are completed all hypotheses about comparative non-Pama-Nyungan must remain highly provisional. Meanwhile, several papers in the current volume make available new synchronic material germane to comparative work — see particularly the papers by Breen and Belfrage on the Garrwan languages, by Harvey on Matngele and Kamu (Chapters 6, 7), and by Evans and Merlan on Dalabon.

A second factor delaying the progress of comparative work on non-Pama-Nyungan languages has been the great complexity of the data. As the reader will determine from a paper like Ian Green's, with its intricate unpicking of the many prefixal paradigms in the South Daly languages, the application of the comparative method to morphological reconstruction in Northern Australia is a slow and painstaking task. Green writes that '[s]ome of the ... auxiliaries, including those for which comparative data has been available for almost two decades, are in fact so strikingly alike ... that one must wonder why the true genetic status of these two languages has remained undocumented for so long'. However, I suspect that the limits of human pattern-recognition are so strongly challenged by such complex data that it often takes a decade or two of immersion in them (as Green himself has done) before the parallels can be articulated properly. Detecting comparable parallelisms across the sixty or so non-Pama-Nyungan languages is likely to keep non-Pama-Nyunganists busy for decades before we have anything like a complete set of hypotheses about the interrelationships of the non-Pama-Nyungan languages. For example, no-one has yet taken on the task of systematically comparing Nunggubuyu and Anindilyakwa,[3] despite their being two adjacent languages with rather similar structures (Heath 1984:638). Similarly, a comparison of Tiwi with its nearest neighbours, the Iwaidjan family, will have to wait first for a proper synchronic description of the languages of the Iwaidjan family (Evans 2000) and a reconstruction of Proto Iwaidjan — a task that will take at least another ten years.

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1 And has been the basis for further published work by Dixon and others: see for example Dixon (1997), Sands (1996).

2 This is not to deny the importance of such early work as the grammars in Capell (1962), or the grammar of Kunwinjku ('Gunwinggu') by Oates (1964), but merely to state that they lack either the phonological precision or the comprehensive treatment of morphological paradigms needed to carry out really accurate comparative work.

3 Though see Heath (1997) for some proposals.

2 The genetic position of the non-Pama-Nyungan languages

Clearly the type of contribution non-Pama-Nyungan languages make to the deeper task of reconstructing Proto Australian will depend on where they are situated within the greater Australian phylum (or family, depending on one's views). In this section I examine the relationship between proposed classifications of Australian languages and the sorts of features they attribute to Proto Australian.

Leaving aside the proposals of Schmidt (1919) and Kroeber (1923), now largely superseded, four main types of relationship have been proposed. For convenience, I will refer to these as (a) the rake model, (b) the diffusion model, (c) the binary model, and (d) the Pama-Nyungan offshoot model. We now consider each of these in turn.

(a) THE RAKE MODEL. On this model, Pama-Nyungan is a genetic construct but non-Pama-Nyungan is not. Non-Pama-Nyungan, on this model, is an aggregate of over twenty families, each on a par with Pama-Nyungan, with no higher-order grouping of non-Pama-Nyungan families proposed. This view is implicit in the comprehensive classification of Australian languages by O'Grady, Voegelin and Voegelin (1966) and O'Grady, Wurm and Hale (1966), as well as the classification in Wurm and Hattori (1981) which largely repeats the 1966 classifications. Figure 1 shows a fragment of this classification, with its rake-like structure, in diagrammatic form.

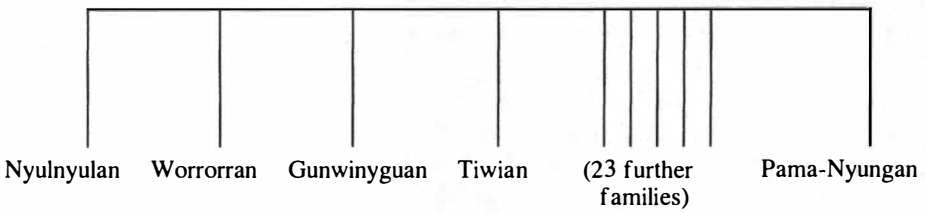

Figure 1: The rake model of non-Pama-Nyungan

It is likely that the authors of this classification regarded it as provisional, pending detailed reconstructive work. Its main value is to highlight the uneven distribution of genetic diversity in Australia, with a complex mosaic of non-Pama-Nyungan languages in the north-western eighth of the continent and a single family, Pama-Nyungan, spread over the remainder. Among other implications, it suggests a north-western origin for the first colonisation of Australia, a consequence first pointed out by Hale (1962).

(b) THE DIFFUSION MODEL FOR NON-PAMA-NYUNGAN. In various publications, Dixon (1980, 1990, 1997) has repeatedly articulated a model in which 'so-called nonPN languages have undergone extensive grammatical changes which have altered their typological profiles; PN languages have not undergone changes on this scale and are certainly typologically closer to pA' (Dixon 1980:226). On this view,

> Pama-Nyungan – although a useful label to cover the large class of Australian languages which have not undergone radical changes that involve the development of pronominal and other prefixes to the verb, and a generally polysynthetic structure — has not yet been shown to have any genetic significance. That is, there is no justification for talking of "proto Pama-Nyungan", as perhaps an early descendant of pA. There is nothing that could be attributed to a putative proto Pama-Nyungan which

> could not equally validly be assigned to proto-Australian. There is no evidence of any shared innovations which would justify a period of common development for languages of the PN type. (Dixon 1980:255–256)

Figure 2, which represents Dixon's position schematically, shows the general typological trait of pronominal prefixation as not corresponding to any genetic grouping.

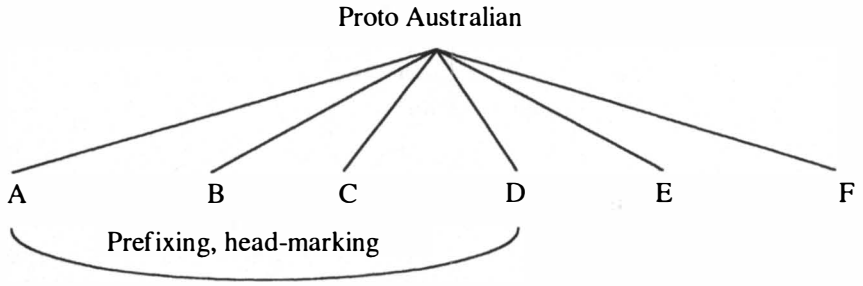

Figure 2: The diffusion model: Pama-Nyungan (E, F) left as a residue through the diffusion of prefixing and head-marking typology through a number of distinct groups (A, B, C, D) in the non-Pama-Nyungan areal bloc (implicit in Dixon 1980).

There are four major problems with Dixon's position.

Firstly, the extent and intensity of diffusion it needs to assume are far greater than the levels attested in detailed studies of intense cases of diffusion in Australia. The most detailed studies of diffusion in Australia have been Heath's various studies of intensive diffusion in Arnhem Land (Heath 1978, 1979, 1981). Yet while these found evidence for diffusion of invariant allomorphs, such as ergative/instrumental *-thu* from Yolngu into Ngandi, they found no examples of diffusion of sets of allomorphs comparable to the complex *-lu* ~ *-ngku* ~ *-thu* ergative/instrumental set or the *-la* ~ *-ngka* locative set found right across the Pama-Nyungan languages. It is also worth noting at this point that some of Heath's examples of 'diffusion' turn out in fact to be shared retentions now that we have better reconstructions of proto Gunwinyguan. See the paper by Alpher, Evans and Harvey, which reconstructs the 'thematising augment' *-thu* and the inchoative *-th:i* in Gunwinyguan, whereas Heath had seen them as borrowings into Ngandi from the Yolngu language Ritharrngu, and Harvey (Chapter 8) and Evans (2001), which present evidence for a similar non-diffusionist analysis of the situation with laminodental stops.

Secondly, the above-quoted claim that 'there is nothing that could be attributed to a putative Proto Pama-Nyungan which could not equally validly be assigned to proto-Australian' is simply false, and is an artefact of the heavy reliance on Pama-Nyungan data in his Proto Australian reconstructions. This point was made in the reviews of Dixon (1980) by O'Grady (1981) and Heath (1982a), as well as more recently in Heath (1990):

> From a methodologically conservative point of view, we should really take Dixon's "Proto-Australian" reconstructions as Proto Pama-Nyungan, since the descriptive materials used are from Pama-Nyungan languages. (Heath 1990:403)

Seeing Pama-Nyungan as a daughter subgroup radically changes the picture of 'Proto Australian'. Once substantial non-Pama-Nyungan data is factored in, the limitation of many of Dixon's 'Proto Australian' features to Pama-Nyungan languages makes them

unattributable to Proto Australian and instead suggests they are Pama-Nyungan innovations. We return to this point in connection with the Pama-Nyungan offshoot model below.

Thirdly, Dixon's position underestimates the degree of structural diversity in the nonPN languages by lumping them all together as having undergone 'radical changes that involve the development of pronominal and other prefixes to the verb, and a generally polysynthetic structure' (Dixon 1980:255–256). But there are great typological differences between, let us say, the Gunwinyguan languages with their single SO/OS–IN–V pattern (IN = incorporated nominal) for all verb stems, without the encoding of directional information, the Iwaidjan languages with their Directional–SO/OS–V pattern, with no noun incorporation but complex suppletion for directionality, and the Daly pattern of a large number of distinct SO+TAM paradigms on different auxiliaries. Now it is certainly true that many non-Pama-Nyungan languages have been moving in the direction of greater head-marking — see Reid's paper, which gives a beautiful example of such changes occurring in Ngan'gityemeri in the last seventy years. But there are likewise cases of changes in the opposite direction — see the description of 'dependentward migration' in languages of the Djerragan family in McConvell's paper, this volume.

As mid-level reconstruction proceeds, the great antiquity of rather different systems of pronominal prefixation within the non-Pama-Nyungan languages is beginning to emerge. This is perhaps illustrated most clearly by the detailed reconstruction of irregular pronominal prefix paradigms in Proto Southern Daly auxiliaries in Ian Green's paper. The evidence from the lexicon and other parts of the grammar points to a huge time gap for the split of Southern Daly from its nearest relatives, and the forms of the reconstructed pronominal prefixes bear little resemblance to those found in other non-PN prefixal systems, such as in Gunwinyguan.

A fourth problem with Dixon's position is that, across many (probably not all) of the non-PN languages, the resemblances are not simply typological/ structural but extend to specific forms. This holds whether we look at pronominal prefixes (see Harvey, Chapter 16), verbal inflections (see Rebecca Green's paper, taking in a number of families of Arnhem Land), detailed aspects of the syntagmatic structure of the verb (see §6 of this introduction), or details of the noun class morphology (see, for example, Clendon 1999). For at least a large subset of the non-Pama-Nyungan languages, the growing number of such formal features, often highly idiosyncratic, increasingly point to deep-level shared inheritance rather than just typological convergence.

This is not to say that Dixon's model does not have two distinct advantages. Firstly, it would account for the very low level of cognacy within the Pama-Nyungan family. The only way proponents of a Pama-Nyungan subgroup can account for such low figures within their model is to assume either widespread lexical borrowing from substrate languages, or a great time-depth for Pama-Nyungan (which would then entail an even greater time-depth for Proto Australian). Secondly, there are aspects of the typological transition from the head-marking, pronoun- or gender-prefixed template assumed for pre-Pama-Nyungan to the dependent-marking, non-prefixed pattern found in Pama-Nyungan for which we still lack a convincing account. Nonetheless, we now have some interesting typological parallels documented for the Mindi family (see Green 1995), and a sketch of how the 'Pama-Nyungan transition' might have occurred is contained in Evans and Jones (1997).

(c) THE BINARY MODEL. Another approach to the classification of Australian languages is to make a first split into two groups, corresponding more or less closely to the Pama-Nyungan vs non-Pama-Nyungan division. Although Capell's (1956) division into 'prefixing' vs 'suffixing' languages was purely typological, and subsequent work has identified examples of prefixing languages within Pama-Nyungan and non-prefixing non-Pama-Nyungan languages (see §3 below), there is nonetheless an overall correlation between typological and genetic classifications.

Heath (1978) explicitly uses the term 'prefixing languages' 'as a genetic label, so that we can speak of 'Proto-Prefixing' and the like' (Heath 1978:3), and continues this approach to classification in more recent publications (Heath 1990) in which he goes on to propose reconstructed morphology for pronominal prefixes on verbs (Heath 1990), noun class prefixes on nouns (Heath 1987) and verbal suffixes (Heath 1990) for 'proto-prefixing'. Figure 3, schematised from the above works by Heath, represents what I take to be his overall view of Australian classification.

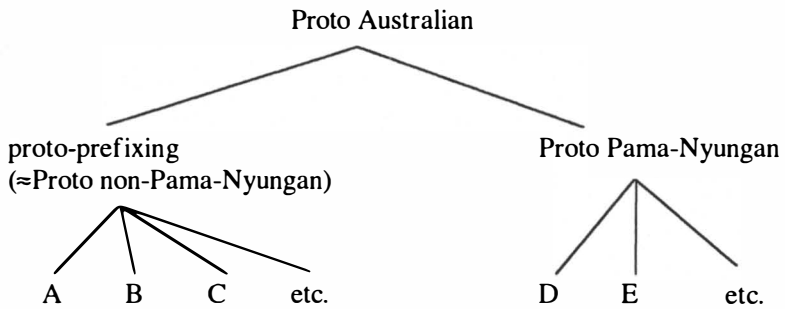

Figure 3: Non-Pama-Nyungan (=prefixing; A, B, C, etc.) and Pama-Nyungan as two early branchings of Proto Australian (after Heath 1990)

Focusing on the prefixing languages, Heath has proposed reconstructions of their complex morphology, which reveal a number of features shared by several of what O'Grady et al.[4] regarded as distinct 'families', and made some progress in the subgrouping of non-Pama-Nyungan languages. For example, he has demonstrated that Nunggubuyu and Ngandi share sufficient features to be identified as belonging to the same family, rather than Nunggubuyu being a family-level isolate as proposed by earlier investigators. (But see the paper by Alpher, Evans and Harvey on some disagreements with the positioning of Nunggubuyu/ Ngandi vis-a-vis Gunwinyguan). Blake's (1988) work on pronouns and case has likewise demonstrated sufficiently widespread similarities within the non-Pama-Nyungan languages (Blake uses the term 'Northern') that he is able to reconstruct a 'northern' free pronoun set, distinct from the Pama-Nyungan set (the latter virtually identical with Dixon's (1980) 'Proto Australian' pronoun set).

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4 In this chapter, 'O'Grady et al.' refers to both O'Grady, Voegelin and Voegelin (1966) and O'Grady, Wurm and Hale (1966), which contain the same analysis, one in monograph form and the other in map form.

Despite these achievements of the binary model, it fails to account for certain facts of the relationship between Pama-Nyungan and non-Pama-Nyungan. Firstly, virtually all investigators have seen the Pama-Nyungan languages as less diverse than the non-Pama-Nyungan ones, a fact most clearly reflected in the large number of non-Pama-Nyungan families set up in the O'Grady, Voegelin and Voegelin classification. Secondly, we now have at least one phonological innovation (initial laminalisation) attributable to Proto Pama-Nyungan: Pama-Nyungan has merged the initial laminals and apicals that are distinct in most non-Pama-Nyungan languages (Evans 1988). Thirdly, the growing evidence for the lack of various Pama-Nyungan features in all non-Pama-Nyungan languages has shifted many grammatical morphemes from the category of retentions from 'Proto Australian' to innovations in Pama-Nyungan. For example, whereas the 'Proto Australian' dative *-gu* has widespread nonPN attestation, the 'Proto Australian' ergative/instrumental *-lu* ~ *-ngku* and locative *-la* ~ *-ngka* are looking more and more likely to be a PN innovation (see above). Further, some of these Pama-Nyungan innovations can now be given plausible sources based on their development from non-Pama-Nyungan precursors: an example is the development of the Pama-Nyungan system of 'conjugation markers' by the analogical remodelling of a more irregular paradigm retained in the Gunwinyguan languages (see the paper by Alpher, Evans and Harvey).

Taken together, these considerations favour the fourth type of classification, to which we now turn.

(d) THE PAMA-NYUNGAN OFFSHOOT MODEL. In his important article 'Preliminaries to a proto Nuclear Pama-Nyungan stem list', Geoff O'Grady (1979) developed his earlier classification by suggesting that Pama-Nyungan was a relatively recent daughter node within a larger Stammbaum containing most extant Australian languages. Of the attested Australian languages he excluded only Anindilyakwa and the Tasmanian languages from membership in a lineage descended from 'Original Australian'. In O'Grady's terminology what most subsequent authors have called 'Pama-Nyungan' he termed 'nuclear Pama-Nyungan', to which he adjoined the Gunwinyguan and Tangkic languages in the slightly larger 'Pama-Nyungan' group. Figure 4 reproduces the relevant parts of his 'hypothetical genealogy' of selected Australian languages; it is simplified by omitting various lineages that have not survived to modern attestation, and which he included in order to stress the likelihood that many other families and even phyla may have been spoken on the Australian continent, before dying out with no trace other than possible substrate effects.

A number of hypotheses have been proposed to account for the expansion of the Pama-Nyungan language over much of the continent (see Wurm 1972; O'Grady 1979; Evans & Jones 1997; Evans & McConvell 1998). Without going into details here, we can summarise the main features of the model as (a) the assumption that, prior to Pama-Nyungan expansion, the level of genetic diversity across the presently Pama-Nyungan part of the continent was comparable to that now found in the non-Pama-Nyungan area, and (b) widespread language shift to Pama-Nyungan then took place, leaving at most some substrate influence from the earlier languages.

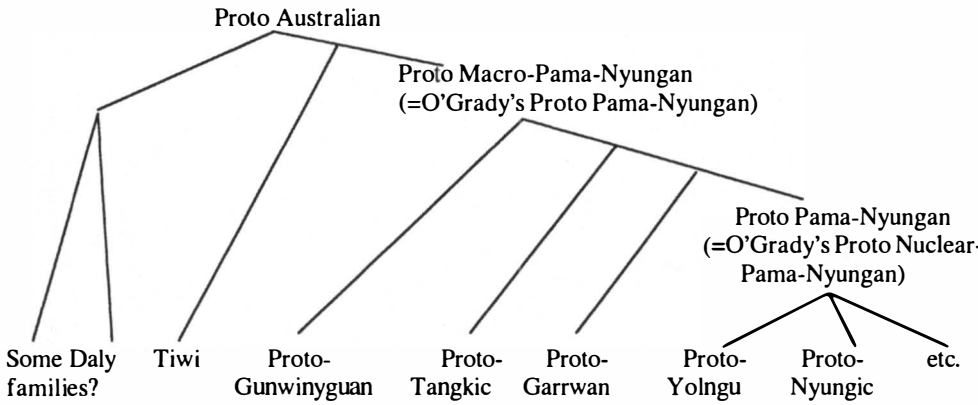

Figure 4: The Pama-Nyungan offshoot model, with Pama-Nyungan as an offshoot sharing immediate ancestry with some non-Pama-Nyungan groups, after O'Grady (1979), Evans and Jones (1997)

The versions of this model proposed in Evans and Jones (1997) and Evans and McConvell (1998) identify the Garrwan family as a close sister of Pama-Nyungan, and link certain morphological and phonological innovations of Pama-Nyungan to stages in the splitting off of Proto Pama-Nyungan and its predecessors. For example, the distinctive Pama-Nyungan free pronoun set is not seen as emerging in one go, but as an accretion of individual lexical innovations; the pronoun set found in the Garrwan family is a sort of halfway point, and significantly has yet to show the effects of initial laminalisation on the second person plural pronoun (*NHvmbala* in Pama-Nyungan, but *nimbala* in Garrwan), compatible with the positioning of laminalisation as an innovation that occurred at the level of Pama-Nyungan proper. Nonetheless, the position of Garrwan remains something of a puzzle; the papers by Breen and Belfrage on Garrwan provide further material that needs to be taken into account, though neither author makes claims about its position within higher-level classifications.

At the same time, the Pama-Nyungan daughter model suggests that non-Pama-Nyungan languages will be of greater importance for the reconstruction of Proto Australian than the Pama-Nyungan languages are: as a daughter subgroup on a par with, say, Gunwinyguan (or perhaps even a daughter thereof, e.g. Ngandi-Nunggubuyu), features of or absences from the Pama-Nyungan languages carry no privileged evidentiary weight in deep-level reconstructions, despite the huge number of Pama-Nyungan languages offering synchronic material. Morphemes that are widespread in non-Pama-Nyungan languages, such as the reciprocal suffix *-NHTHu- ~ -NHTHi-* (see the paper by Alpher, Evans & Harvey), or the pronominal prefixes to the verb discussed in Harvey's Chapter 16, are not invalidated as Proto Australian candidates merely because of their absence from all Pama-Nyungan languages, which may reflect quite specific and relatively recent developments. Conversely, a past form like Walmatjari *-rni ~ -ni*, which Dixon (1980:385) cites but does not reconstruct back to the level of Pama-Nyungan, preferring to reconstruct past suffix **-NHu* on the basis of various other Pama-Nyungan languages, assumes greater plausibility as an ancient retention in the light of the widespread non-Pama-Nyungan past suffixes in *-ni* (see the paper by Alpher, Evans & Harvey).

The same applies, of course, to the lexicon. Although our research on non-Pama-Nyungan lexical reconstruction is even more primitive than that on its grammar, it now looks likely

that many of the words in Capell's 'Common Australian vocabulary' are restricted to Pama-Nyungan: such terms as *bula* 'two', *jina* 'foot', *gujarra* 'two' and *bina* 'ear' do not occur outside Pama-Nyungan, suggesting they are Pama-Nyungan lexical innovations, whereas other terms like *jarra* 'thigh', *lirra ~ dirra ~ rirra* 'tooth' and *gugu* 'water' are attested in both Pama-Nyungan and non-Pama-Nyungan and are hence plausibly attributed to a much deeper level, perhaps Proto Australian or perhaps an ancestor of Pama-Nyungan and most but not all nonPN.

In fact, I believe it is premature to make any proposals about Proto Australian until we have a better-established subgrouping of the non-Pama-Nyungan languages. The above remarks are merely intended to illustrate the way in which the projected time-depth of particular elements present or absent in Pama-Nyungan depends on the location of Pama-Nyungan in the overall classification of Australian languages.

There is a second consequence of the Pama-Nyungan daughter model, not available with the other three models: explanations for Pama-Nyungan forms can be sought in non-Pama-Nyungan languages. On the other hand, if Pama-Nyungan is merely an equal sister to non-Pama-Nyungan (à la Heath), or a typologically or areally-defined collection of sisters (à la Dixon), then non-Pama-Nyungan forms cannot be used to explain Pama-Nyungan forms (except by postulating borrowing). Yet on the offshoot model we can expect that non-Pama-Nyungan languages will often furnish plausible evidence regarding the origins of Pama-Nyungan forms. So far there has been negligible research on these lines — obvious points of departure would be the sources for the innovated Pama-Nyungan free pronouns, the distinctively Pama-Nyungan case suffixes (ergative/instrumental *-lu/-ngku*, locative *-la/-ngka*, accusative in *-NHa*, ablative in *-ngu*), and nominalising/participial *-NHTHa-*, as well as the developments of vowel and consonant length as contrasted in Pama-Nyungan and non-Pama-Nyungan. Within this volume, the paper by Alpher, Evans and Harvey on verb conjugations advances some hypotheses about how the Pama-Nyungan conjugational system may have emerged from a system more like that reconstructable for Proto Gunwinyguan.

3 Internal classification of the non-Pama-Nyungan languages

Existing classifications of non-Pama-Nyungan languages postulate some twenty-seven coordinate language families, with no higher-order subgroupings, and many of the families having a single member. Even this understates the number of assumed non-Pama-Nyungan families, since the linguistically diverse area around the Alligator Rivers, simply left as 'unclassified', contains at least two highly divergent languages: Limilngan (Harvey 2001) and Umbugarla (Davies 1989), each with their own claim to family-level isolate status.[5]

Comparative work over the last two decades, including many of the papers in this volume, has substantially revised this picture, grouping many of these families together, reassigning some languages into and out of non-Pama-Nyungan, and splitting other families. The following paragraphs summarise the changes since the O'Grady classifications; Map 1 summarises the resulting overall picture.

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5 In addition, there are likely to have been further families in the region, though these died out before they could be recorded properly. Ngardug, at the south-eastern corner of Van Diemen's Gulf, is an example. Other languages of the region, such as Buguniidja and Ngurmbur, were said by people alive in the 1980s to have been close to Umbugarla, but without recorded material it is impossible to be sure of their status.

(a) Work by Chadwick (1984), Nordlinger (1998) and Green (1995) has shown that what was formerly known as the Djingili-Wambayan family should be grouped with the Djamindjungan family in the so-called Mindi family. This family is geographically discontinuous: a column of Pama-Nyungan languages (of the Ngumpin-Yapa subgroup) separate the Jingulu-Wambayan languages, which are spoken in the Barkly Region, from the Djamindjungan languages, spoken in the Victoria River District. Wambaya and Jingulu, long seen as anomalous because they are non-prefixing non-Pama-Nyungan languages, appear to have developed noun-class suffixes through the suffixing of noun-class-prefixed demonstratives. Further, they appear to have reduced a small set of pronominally-prefixed verbs to the status of a second-position auxiliary (in Wambaya), which in Jingulu (= Jingili, Djingili) has gone on to develop into a complex verbal suffix. Although this lumping has gained wide acceptance, a recent conference paper by Nordlinger and Green (2001) has argued for a more sober assessment of the evidence, pointing out the paucity of clearly shared innovations, and the small number of vocabulary items distinctive to this family. In addition, they point out that there is no evidence for grouping Jingulu together with the remaining Barkly languages, which they term the Ngurlun subgroup (Wambaya, Gurdanji and Ngarnka). Rather, both Jingulu and the Ngurlun languages appear to have independently converged on the suffixing, dependent-marking typology of their southern neighbours.

(b) The Tangkic languages of the Southern Gulf of Carpentaria have been removed from Pama-Nyungan and are now regarded as a distinct non-Pama-Nyungan family (Blake 1988; Evans 1995). Evaluation of the materials on Minkin, originally treated as a family-level isolate, suggests it too should be subsumed under Tangkic (Evans 1990). Blake (1990) has suggested that the auxiliary in Yukulta, the most conservative language of the group, retains vestiges of the pronominal prefixes found in most non-Pama-Nyungan groups, and indeed the auxiliary may be a degenerate pronominally prefixed verb, as in Wambaya.

(c) Yanyuwa, from the Borroloola region, originally classified as a family-level non-PN isolate, has been shown to be Pama-Nyungan and indeed to belong to the Warluwarric subgroup (Blake 1988; Carew 1993; Brammall 1991). Again, the resulting family is geographically discontinuous.

(d) The Garrwan languages, Garrwa and Wanyi, have been shuffled back and forth between Pama-Nyungan and non-Pama-Nyungan in existing classifications: O'Grady et al. (1966) treated them as a distinct non-Pama-Nyungan family, Blake (1988) included them as Pama-Nyungan, but revised his view in Blake (1990:62), stating that 'Karwan [=Garrwan – N.E.] is basically non-Pama-Nyungan and ... the Pama-Nyungan pronoun forms are intrusions'. Despite being relatively close to Pama-Nyungan in their pronominal and case morphology the Garrwan languages share a number of verb formatives with Wambaya (Nordlinger 1998:159) and it is not clear at present whether this is due to borrowing or shared inheritance. The papers in this volume by Breen and Belfrage expand our synchronic understanding of these two unusual languages, and furnish new material on the lexicon, the functioning of auxiliary elements, and the conjugational system, that will need to be taken into account before the puzzling position of these languages can be understood. Breen's paper, in particular, mentions a tantalisingly large number of morphological items shared with Wambaya/Gurdanji, though he refrains from proposing a link between these two groups.

(e) The Daly River languages were treated as a single family in Tryon's (1974) early classification, but recent research has resulted in extensive splitting and reclassification. Ian Green's paper argues for a South Daly family that groups together Murrinh-Patha (treated as a family-level isolate by earlier classifications) with Ngan'gityemeri. Work in progress by Green, Reid and Harvey then splits the remaining Daly languages into four families:

- Eastern Daly, containing Kamu and Matngele (see Harvey, Chapters 6 and 7)
- Northern Daly, containing Malak-Malak and Tyeraity
- Anson Bay, containing Paccamalh and Pungu-Pungu
- Western Daly, containing Marrithiyel, Marranungku, Emi and others

Of these four groups, possible remote connections to the east have been proposed for the Eastern Daly languages, which appear to have some affinity, albeit remote, with the Gunwinyguan languages of Arnhem Land (Harvey, Chapters 6, 7). The overall picture that emerges from recent work on the Daly languages is that they have much more genetic diversity than originally believed, but that this has been overlaid and partly erased by strong convergence in a Daly River Sprachbund. The effects of this convergence on two languages at the eastern boundary of the Daly region are discussed in the above-mentioned papers by Harvey.

(f) In Arnhem Land there has been substantial reduction in the number of families postulated. To begin with, the Gunwinyguan family has been expanded both eastward and westward, to include Nunggubuyu (see papers by Alpher, Evans and Harvey, and Harvey, Chapter 8), and the 'family-level isolate' Warray, now regrouped with Jawoyn into the Western subgroup of Gunwinyguan (Harvey, Chapter 10). The further possibility of including Anindilyakwa within 'Greater Gunwinyguan' would follow from Heath's remarks about the closeness of Nunggubuyu to Anindilyakwa (Heath 1978, 1990, 1997), but so far no-one has risen to the challenge of assessing the genetic position of Anindilyakwa in detail. Arguments for extending Gunwinyguan so as to include Mangarrayi, another family-level isolate in the O'Grady classification, are given by Alpher, Evans and Harvey in their paper, but Merlan (Chapter 12) disagrees with this assessment, arguing instead that it should be grouped with the Maran languages. A possible solution to this dilemma may come from including them within an even broader 'Arnhem' grouping (see below), to which both sets of shared features could then be attributed. At the same time as the above languages have been added to Gunwinyguan, other languages have been provisionally excised for lack (at present) of clear evidence of close relatedness: Wagiman, and Wardaman/Dagoman/Yangman, which were all included as Gunwinyguan both by O'Grady et al. (1966), and by Harris (1969).

In North-Central Arnhem Land, the classification by O'Grady et al. postulated three distinct families in the Maningrida region: Burarran, comprising the two languages Burarra and Gun-Gorrogone (=Gurr-goni), and the two family-level isolates Nakkaran (containing just Na-kara) and Gunabidjian (containing just Ndjébbana, aka Gunabidji). Rebecca Green's original presentation at the 1989 conference brought together evidence for far-reaching morphological parallels between these four languages, justifying their inclusion in a single 'Maningrida' family. In the expanded version of that paper included in the present volume, she goes on to find evidence that many of

the same grammatical elements are in fact more widespread, occurring for example in the Maran languages along the Roper River, and in Mangarrayi. This suggests there is strong prima facie evidence for a higher-level 'Proto Arnhem', which would include these languages, plus greater Gunwinyguan, plus a number of others: Gaagudju, Kungarakany, and possibly Wagiman/Wardaman. It is too early to tell whether other families of Arnhem Land — Iwaidjan, Tiwi, Geimbiyu, Umbugarla, Larrakiya and Limilngan — can be linked to this higher-level grouping.

(g) The Kimberleys is the area that has undergone the least change in classification. Stokes and McGregor, in Chapter 2, furnish more detailed information than was available in the 1960s, but that essentially confirms the classifications made by O'Grady et al. The three other Kimberley families proposed in O'Grady et al., namely Worrorran, Bunaban and Jarragan, have likewise come through unrevised.[6]

4 Lexical reconstruction and historical phonology

Taken together, the above proposals reduce the number of groupings within nonPN to around twenty, and it is likely that further research will uncover other connections as we begin to compare reconstructed proto-systems rather than modern languages. Progress will remain slow, however, until purely morphological comparisons can be supplemented by reconstructed lexicon and studies of historical phonology, allowing us to bring phonological innovations and etymologically-informed vocabulary comparisons into our purview.

Work on lexical reconstruction has been hindered for non-Pama-Nyungan languages by the lack of substantial dictionaries. At present there are fewer than ten book-length dictionaries: Ungarinyin (Coate & Elkin 1974), Bardi (Aklif 1999), Tiwi (Lee 1993), Nunggubuyu (Heath 1982b), Anindilyakwa (Groote Eylandt Linguistics 1993), Burarra (Glasgow 1994), Kayardild (Evans 1992) and Lardil (Ngakulmungan Kangka Leman 1997). It should therefore come as no surprise that there has until now been no substantial study of historical phonology in any non-Pama-Nyungan subgroup.

Harvey's study of the Proto Gunwinyguan lexicon (Chapter 8) is the first serious attempt to tackle historical phonology in a non-Pama-Nyungan family, and shows how much can be done in this area. The phoneme inventory reconstructed by Harvey for Proto Gunwinyguan differs significantly from Dixon's 'Proto Australian' phoneme inventory. It contains five vowels without a length distinction (against Dixon's three vowels plus length), and paired singleton and geminate (or perhaps long and short) stops (against a single series in Dixon's 'Proto Australian'), and two laminal stops (laminopalatal and laminodental), though only a single laminal nasal (laminopalatal). A further noteworthy feature of Harvey's reconstruction is the high specificity of plant and animal vocabulary reconstructable for Proto Gunwinyguan. This contrasts starkly with the paucity of such vocabulary currently reconstructable for Proto Pama-Nyungan (Koch 1997; Nash 1997; Evans & Jones 1997). It is an interesting question whether this is due to the more homogeneous ecology of the

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6 An intriguing unpublished conference paper by Saunders (1999) claimed that the previously undocumented language Andajin may be a mixed language sharing Bunaban and Worrorran traits. However, at this point there is insufficient data to evaluate this claim properly, or to eliminate the effects of code-switching in the speech of the sole surviving speaker on whose knowledge the paper was based.

Gunwinyguan as opposed to the Pama-Nyungan area, the greater closeness of the languages compared, or the lack of substrate influence in Gunwinyguan.

Returning to the issue of historical phonology, the existence of two stop series is in fact widespread in the Top End and the untangling of genetic and areal features is particularly complex here. Heath (1978, 1984) took the view that the single stop system in Nunggubuyu descends from an ancestral system with two stops (at the level of Proto Ngandi-Nunggubuyu), with the long/voiceless series continuing as stops and intervocalic short/voiced stops leniting to semivowels. Harvey's Gunwinyguan reconstruction confirms this, and identifies Mangarrayi as another language which has lost the contrast. A recent study by Gabina (2001) of the historical phonology of the adjoining Maningrida languages likewise finds clear evidence for reconstructing a long/short stop contrast in that family, though the initial stock of Proto Maningrida long stops has been augmented by a number of language-specific innovations such as the development of long stops from clusters and at certain morpheme boundaries. With the adjoining Pama-Nyungan languages in the Yolngu enclave, on the other hand, the position is less clear: are they the sole heirs to a Proto Pama-Nyungan two-series system, or did they develop it under areal influence from their two-series neighbours? Although the usual assumption that Proto Pama-Nyungan had just one stop series would imply that the Yolngu double series is an areally-motivated innovation, at present this is based simply on what is typical across Pama-Nyungan; Wood (1978) argues for it being an innovation, though without giving a worked-out scenario. And for other language families of the region, such as Iwaidjan and Maran with their single stop series, and the Daly River languages with their double series, we lack any idea of whether the proto-languages had one series or two.

5 Problems of diffusion and areal features

In an area as multilingual as northern Australia,[7] linguistic diffusion and the consequent development of areal features is bound to be widespread. Alpher's (1976) studies of linguistic diffusion in Cape York, and Heath's (1978, 1979) examinations of linguistic diffusion in Eastern Arnhem Land demonstrated high levels of indirect and direct morphological borrowings between languages; in the latter case this crossed the Pama-Nyungan/non-Pama-Nyungan divide. Many subsequent studies have demonstrated widespread diffusion and Sprachbund phenomena — see for example Hercus (1987) and Rigsby (1997). Continuing this tradition, in the present volume, are the studies of direct and indirect diffusion in the Daly Region by Harvey (Chapters 6 and 7), and of mutual structural adaptation between Pama-Nyungan and non-Pama-Nyungan languages in the Victoria River region by McConvell (Chapter 3).

Significantly, the focus in these papers is on indirect (structural) diffusion, rather than on the direct diffusion of morphemes. Throughout the last two decades there has been a tendency to overstate the importance of direct diffusion in Australian linguistics, so that in the complex matter of deciding between diffusion and inheritance the default explanation

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7 For discussions of the extent of multilingualism in the Top End see Elwell (1982) and Brandl and Walsh (1982).

has been taken to be diffusionist by some authors.[8] The most serious example has been the dismissal of Pama-Nyungan as a genetic group on the basis of putative areal diffusion (see above). Another example is the claim that the nominal gender system including the prefixes *ma-* (vegetable) and *gu-* (neuter), widespread in non-Pama-Nyungan and in my view reconstructable to very deep levels, could owe their distribution to diffusion rather than inheritance. These prefixes form part of a four- or five-class system that I also believe to be reconstructable, but the form and content of the other three classes is less clear and no papers in the current volume discuss it.[9] Heath (1978:88) is one who suggested the ubiquity of this system could result from diffusion:

> [I]t should be indicated that the spread of noun-class systems over much of north-central and north-western Australia may well have been largely accomplished through direct diffusion of the actual affixes, rather than by independent developments in each language group.

However, the evidence that Heath assembles for direct diffusion of noun classes in eastern Arnhem Land is limited to the form of certain non-human prefixes in Warndarang. His arguments (Heath 1978:90) that the *n*-less forms in Warndarang have been borrowed from pre-Nunggubuyu are tendentious and other explanations are equally plausible, such as the possibility that only Warndarang has preserved the relevant forms.

Apart from the need to use careful evidence from internal alternations, and to integrate the findings of historical phonology (both of which are amply pointed out by Heath), three types of consideration need to be given.

Firstly, the appearance of data from further afield can suddenly alter the interpretation of features shared between neighbouring languages: a feature X, shared by neighbouring L1 and L2 in different subgroups, may look diffused while one only considers the local area, but be more plausibly treated as inherited once it is shown to be present in a third group. Consider the fifth, neuter-type, gender in Warndarang, with form *(r)a-*; Heath attributed it to borrowing from Nunggubuyu on the basis that within the family containing Warndarang, namely Maran, no other language attests this gender. But the likelihood that this form descends through Proto Maran rather than through borrowing is increased when one realises that distant Maung also has a fifth, neuter-type, gender, in *a(K)-*. The paper by Alpher, Evans and Harvey is another example of how a widened purview can reveal putative diffused innovations as areally-shared retentions: it identifies two morphemes which, though claimed by Heath (1978) to have been borrowed into Gunwinyguan (specifically Ngandi) from Yolngu (specifically Ritharrngu), turn out to be retentions shared by both groups, once one brings in evidence from groups further afield (such as Warray and Dalabon).

Secondly, the need for reconstruction of paradigms and irregularities cannot be overemphasised. As Nichols (1996:52) points out, '[p]aradigmaticity imposes co-occurrences and an ordering on a set of forms each of which, if taken individually, would be much too

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8 Obviously both diffusion and inheritance are present throughout Australian languages. However, in terms of scientific heuristics, I believe it is problematic to take diffusion as the default position. This is because, if we take the classical inheritance approach as our starting point, it is easy to falsify (e.g. through exceptions to regular correspondence sets), whereas if we take diffusion as the starting point, falsification is much more difficult, since every appeal to shared features can be explained as due to yet more diffusion.

9 See Clendon (1999) for a recent comparison of Worrorran and Nunggubuyu, and Sands (1995) for a compilation of much of the relevant data.

short for its consonantal segments to reach the individual-identifying threshold. The co-occurrences and ordering allow a probability level for the whole subsystem to be computed as the product of the probabilities of the individual forms and categories.' Suppletive sets, or even sets of allomorphs, are unlikely to be diffused en bloc; rather at most a single allomorph will be borrowed.

Thirdly, the mere fact that some feature is found just in adjoining languages of different groups does not automatically require an explanation in terms of diffused innovations, since diffusion can also support shared retention (Evans 2001). This is one possible explanation of the anomalous situation reported in Ian Green's paper, where adjacent languages share scores of paradigmatic irregularities, despite percentages of shared vocabulary below 15%: that over an immensely long period, bilingualism between the two languages may have preserved parallelisms in detailed structure at the same time as the more conscious process of differentiating vocabulary led to widespread lexical divergence.

6 Evidence for deeper-level relatedness

The primary focus of our discussion so far has been reconstruction at the level of the individual family. However, the amount of shared morphology across non-Pama-Nyungan languages is sufficient that deeper-level reconstructions are likely to prove rewarding.

I will now give a taste of the sort of evidence that points to the relatedness of nearly all non-Pama-Nyungan languages, and allows a reconstruction of specific areas of verbal and nominal morphology. (I say 'nearly all' because there remain a few of languages of the Darwin region — Limilngan and Larrakiya — as well as many languages of the Daly River, in which the reflexes of the forms to be assembled below barely appear). To avoid clutter I will select a few representative morphemes from half-a-dozen witness languages that represent most of the diversity found among the nonPN languages, as well as possessing a good geographical spread.

Most nonPN languages, and by presumption the proto-language from which they descend, have the following basic structures for noun and verb:

Noun:	**Verb**:
Ncl – Root – Case	S/O/FUT – Root – RR – TAM

Figure 5: Basic structures for noun and verb in Proto Australian and most nonPN languages

Over most of the non-Pama-Nyungan area (excluding Tangkic and Garrwan), the verb is the most complex part of speech morphologically.

The prefixal system encompasses prefixes for subject, object and futurity, as well as a suffix *-n* that mostly follows the object morpheme (object morphemes are of course absent if the verb is intransitive). The ordering of these elements is complex: a constraint on the order of subject and object is rivalled by another, stronger constraint that first and second person morphemes precede others, while the placement of the future/potential morpheme *%pana%*

(often reducing to *pa*, *na*, or *ana*)[10] depends on the syllabicity of the other prefixal elements and the placement of morpheme boundaries between them.

An idea of the similarities between different nonPN languages can be gained by comparing the following six forms of the verb 'hit' in Maung and Nunggubuyu, the first spoken on the north Arafura coast of Arnhem Land, and the second also in Arnhem Land, but on its eastern coast. They belong to quite distinct nonPN families and no investigator yet has proposed any genetic or areal link between them (except at the level of Australian languages as a whole).[11] The forms for 'he hit me', and 'she hit me' are given in the future and two non-future forms. The root for 'hit', a reflex of *pu* as in most Australian languages, has (probably independently) lenited to *wu* in both these languages, although *pu* is still found in certain environments, not shown here, such as after nasals. And two of the three tense/aspect/mood suffixes are cognate: past 1 *-ng* and past 2 *-ni*, the two forms basically expressing a perfective vs imperfective contrast in both languages (see the papers by Alpher, Evans & Harvey and Evans & Merlan for discussions of such systems within Gunwinyguan). In Nunggubuyu the form for 'hit' has been somewhat disguised by vowel changes in the two past tenses,[12] but the original *u* is preserved in the future as well as in other tenses not shown here (nonpast3 *wu:'* and evitative *wumaŋun*).

(1) 'he > me'

Maung	*ngani-wung*	*nganpani-wu*	*ngani-wuni*
Nunggubuyu	*ngani-wang*	*ngampani-wumana*	*ngampani-wini*
	1OBJ.3mSUB-hitP	1OBJ.FUT.3mSUB-hitF	1OBJ.3mSUBJ-hitP2
	'he hit me'	'he will hit me'	'he was hitting me'

(2) 'she > me'

Maung	*ngannga-wung*	*nganpanga-wu*	*ngannga-wuni*
Nunggubuyu	*ngangi-wang*	*ngampangi-wumana*	*ngampangi-wini*
	1OBJ.3fSUB-hitP	1OBJ.FUT.3fSUB-hitF	1OBJ.3fSUBJ-hitP2
	'she hit me'	'she will hit me'	'she was hitting me'

As can be seen, the prefixal morphemes are arranged with first person (*nga-*) preceding third person (*ni* if masculine, *nga-* (Ma) or *ngi-* (Nu) if feminine). An object marker *-n* is placed after the first person prefix, which is in object function here. In Maung this *-n* disappears before another *n*, and in Nunggubuyu, where the morphophonemics is more complex, it assimilates to *m* before *p* and is lost before any other nasal; wherever it occurs, it is shown in bold for ease of identification. Finally, a future marker *pa-* (identical in both languages, at least in this environment) is placed (in these cases) between the object marker and the third

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10 Clendon (1999), in his discussion of features shared by Worrorra and Nunggubuyu, gives a form *-^{b}*wa(n)-* (i.e. *wa(n)-* alternating with *ba(n)-*) for a prefix with 'counterfactual' semantics; the forms match well with the Maung prefix. A full-scale comparison of this prefix across non-Pama-Nyungan has yet to be undertaken.

11 Though Rebecca Green's higher-order 'Proto Arnhem' construct may eventually turn out to subsume Maung, she does not include the Iwaidjan languages within this group.

12 In the paper on Proto Gunwinyguan verb inflections by Alpher, Evans and Harvey, this verb is reconstructed with ablaut in the past perfective (**pom* ~ **pong*). The Nunggubuyu form *-wang* represents the levelling of *a* and *o* that has occurred in Nunggubuyu phonology; we do not know enough about Iwaidjan historical phonology to know whether *-wung* derives from *a* merger of *u* and *o*, or contains an original *u* vowel.

person subject. In Nunggubuyu this future marker has been extended to a general non-punctual marker and is also used in some non-future tenses, e.g. the 'past 2' which typically has an imperfective meaning. As a result of these changes, Maung reuses prefixes from the first column in the third, while Nunggubuyu reuses prefixes from the second column instead. Despite these language-specific changes, the complex inflected words considered here show clear similarities between Maung and Nunggubuyu in form, word structure, and the combinatorics of specific morphemes.

These forms are only a tiny fraction of the paradigm, and once one compares whole paradigms (with upwards of fifty elements, some of which, such as the 'I > you' and 'you > me' combinations are notoriously unstable) across fifty or more languages it is easier to lose the thread. However, to show that the resemblances are not simply bilateral I now give a slightly broader sample of eight languages and seven paradigmatic values (Table 1); see Harvey (Chapter 16) for a much fuller survey of intransitive prefix forms. Only the first combination above ('he > me') is included, in the fifth row, and in most languages this has the form *ngan-* rather than *ngani-*, possibly because in most languages the third person masculine pronoun is encoded by *ø* rather than *ni-*.[13] In this diagram I have bolded elements which, in a given language, appear to be ancestral and derivable from the postulated proto-forms given in the right hand column (I label this 'pX', Proto X, to emphasise that this may not go all the way back to 'Proto Australian'). Without going into the details it should be clear that there is substantial comparability of forms across the seven representative languages, which were chosen to span the full nonPN area. (In Kwini there are no transitive forms, so only subject forms are given; this is typical of the way a single principle, such as the discontinuation of object marking, can lead to the loss of a great deal of information from the paradigm).

Table 1: Selected prefix forms in seven nonPN languages

	Maung	Tiwi	Nung	Wambaya	Kwini	Kune	Wardaman	Ungarinyin	pX
1sg	**nga-**	**ngərrə-**	**nga-**	**ngi-**	**ngv-**	**nga-**	**nga-**	**nga-**	nga-
2pl	**kurr-**	ngətə-	nurru-	**kirri-**	**kirr-**	ngurri-	nu-	**kurr-**	kurrV- nVrrV-
3pl	awa-	**pu-**	**wurru-**	**irri-**	**pirr-**	**pirri-**	**wurr-**	**purr-**	pVrrV-
1sg/3*	**ngi-/nga-**	**ngərrə-**	**nganu-**	**ngi-**		**nga-**	**nga-**	**anga-**	nga-
3*/1sg	**ngani-**	yiməni-	**ngani-**	kini-ng-		**ngan-**	**ngan-**	**ngan-**	ngan(i)-
3pl/1sg	**ngantu-**	**puməni-**	**ngampi-**	irri-ng		**nganti-**	**nganpurr-**	**nganta-**	nganpu-
1sg/3pl	**ngawun-**	**ngawəni-**	ngarra-	ngi-		**ngapin-**	**ngawun-**	**punga-**	ngapun-

For a fuller consideration of the intransitive prefix forms, the reader is referred to Harvey's paper in this volume (Chapter 16), which postulates an eight-valued system, with four persons (first inclusive, first exclusive, second, and third) intersecting a two-valued number system of the minimal-augmented type (so that he would gloss my 1sg, 2pl and 3pl above as 1 minimal, 2 augmented and 3 augmented). The two forms *kurrv-* and *nVrrV-* each have such widespread reflexes across non-Pama-Nyungan that Harvey argues both should be reconstructed; the conditioning factor between these two forms (which may have

13 Though it is also possible it derives from *ngani* by loss of the final vowel.

been some sort of tense/aspect/mood category, for example) has yet to be worked out. For the transitive forms we await a systematic study. An important double point demonstrated in this paper is, on the one hand, the need to reconstruct pronominal affixes and free pronouns separately, and on the other, the relatively greater stability of the bound over the free pronominal forms.

Turning now to another site on the verbal word, and sampling derivational rather than inflectional morphology, consider the marking of reflexives and reciprocals. The paper by Alpher, Evans and Harvey (Chapter 11, §3.19) considers cognate reflexive and reciprocal morphemes across a range of non-Pama-Nyungan languages, and postulates distinct reflexive and reciprocal suffixes which have often merged in modern descendants (sometimes generalising the reflexive, at others the reciprocal). Again, we are able to postulate clear form–meaning–combinatoric triplets for a deep-level common ancestor; significantly, we are here able to find cognates in Pama-Nyungan languages as well (Kulin, Djabugay, Warrgamay) for this suffixal slot.

As a third illustration of shared similarities, consider the system of noun class or gender prefixes found in most nonPN languages, as shown in Table 2, below.[14] Right across the nonPN area one finds evidence of descent from an ancestral system of at least four, possibly five classes: masculine (I), feminine (II), vegetable (III), certainly one neuter (IV) and possibly another (V).[15] For most classes there are at least two distinct allomorphs, whose function is not clearly understood but which were probably portmanteaux representing noun class plus another category, either case or a TAM category.[16] The same pairs of forms (e.g. masculine *yi-* and *ni-/na-*,[17] feminine *(y)iny-* and *nga-*) recur in language after language; in some

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14 Unfortunately the track disappears here also in PN, which loses its prefixes. One PN language, Yanyuwa, has noun class prefixes but these are a redevelopment, though a complex case since the forms are cognate with nonPN; the most likely scenario is that the prefixes survived on demonstratives, from which they were regrammaticised as nominal prefixes.

15 Whereas the other four exhibit reasonable agreement in their semantic content across languages, this is less clear in the case of the fifth class *(r)a-* : it is focused on animals in Ngandi and Gwini, but the Maung *aK-* class is focused on plants, meteorological phenomena and abstracts. It may be the these prefixes are simply non-cognate, although the comparable class in Nunggubuyu (*ana-*) contains both life-form terms of fauna, and many specific flora terms.

16 Portmanteaux of noun class plus case are found in Nungali, for instance (Bolt, Hoddinott & Kofod 1971:69), where the Class IV prefix has the absolutive form *nu-* and the dative/possessive form *ki-/ku-*, Class II has the absolutive form *nya-*, the ergative/instrumental/locative form *nganyi-*, and the dative/possessive form *ganyi-*. In other languages a range of different conditioning factors apply, e.g. punctual vs non-punctual in Nunggubuyu (i.e. conditioned by tense/aspect/negation), while in Umbugarla and to a lesser extent in Maung they are conditioned by the lexical item they attach to. The whole pattern suggests that an old paradigm of noun class by case has collapsed in most daughter languages, with reassignment of function to the variants on different bases in different languages, and categorial loss of all but one variant in others. See also Heath (1987) on evidence for the presence of an accusative series for these prefixes.

17 In Anindilyakwa (Leeding 1989, cited in Sands 1995) both *n(i)-* and *y(i)-* are found, the former for human males and the latter for nonhumans with masculine characteristics. A hypothesis which would account for the recurrent association of both *n-* and *y-* initial forms with Class I / Masculine across the non-Pama-Nyungan area would be to postulate an original system of the Anindilyakwa type, with collapse of the distinction in most daughter languages, either with selection of one or the other form (e.g. *yi-* in Wardaman but *na-* in Warndarang) or retention of both forms but with a change in the conditioning of the choice to case (as in Maung) or aspect (as in Nunggubuyu).

languages such as Wambaya and Tiwi they have shifted from prefix to suffix,[18] and in other languages (e.g. Tiwi) may survive only as fossilised forms on a few lexemes.

While space precludes us from a fuller survey of shared grammatical morphology in non-Pama-Nyungan languages, it should be clear from the preceding examples that the similarities in both nominal and verbal morphology are substantial and intricate. They also occur in parts of the grammatical system which one expects to be immune to diffusion, so they cannot be attributed to language contact. It may still be too early to tackle their systematic reconstruction head-on. First we need much sharper characterisations of intermediate systems at the family level, as represented by most of the papers in the current volume, and attention to historical phonology and lexical reconstruction in a way that is here represented here only for Nyulnyulan (Chapter 2) and Gunwinyguan (Chapter 8), in both cases in a rather preliminary way. But the number of affix points on nominals, adjectives and verbals at which distinct paradigmatic sets are comparable over most of the non-Pama-Nyungan languages provides a rich vein for historical linguists to mine in the years to come.

Table 2: Noun class prefixes (in some cases frozen) in nine nonPN languages

Class:	I Masc	II Fem	III Veg	IV Neut	V Neut 2
pNPN	yi- ni-	yiŋ- ŋa-	ma- mi-	ku-	a-
Maung	[y]i- (absV, Adj) ni- (ergV) nu- (some Adj)	iŋ- (absV, Adj) ŋa- (ergV) niŋ- (some Adj)	ma- (absV, most adj) ŋa- (some Adj)	aŋ- (absV, most adj) wu- (most Adj)	ak- (absV, most adj)
Tiwi	-ni suffix. Frozen [y]i- prefix e.g. yiraɹa 'two (masc.)'	ŋa - suffix Frozen [y]iŋ- prefix e.g. yiɳṯaɹa 'two (fem.)'	Frozen mu- prefix e.g. muruwaṯi 'casuarina' cf. K ɹukuṯi 'casuarina'	Frozen wu- prefix e.g. wuɹara 'belly'	
Umbugarla[19]	ki-, k-, na-, niṯi-	kiŋ-, niŋku-, ŋimpili-	ma-, mi-, m-, maṯi-	ku-, kw-, nu-	
Wambaya	-yi (abs) -ni (n.abs)	-ṇa (abs) -ŋa (n.abs)	-ma (abs) -mi (non.abs)	-ka/-wa (abs) i-/ki- (non.abs)	
Kwini	nv- (verbal) n- (nominal)		m[v]- (verbal and nominal)	w[v]- (verbal and nominal)	a[n]- (verbal) a- (nominal)
Kune[20]	na-	ŋal-	man-	kun-	
Wardaman	yi- (animate, human, meat)		ma-	wu-	
Nunggubuyu	na- (contin.) yi:- (punc.)	ŋara- (contin.) yi:- (punc.)	mana- (cont.) ama- (punc.)		
Ungarinyin	a- (body part)	ŋa- (body part)	ma- (body part)	wu- (body part)	
Warndarang	ṇa-	ŋi-	ma-	wu-	[ṛ]a-

18 In Wambaya this happened by postposing demonstratives (which included the prefix) to the modified noun; when the demonstrative grammaticalised to a suffix this left the erstwhile prefix in suffix position. See Green (1995) and Nordlinger (1998).

19 In Umbugarla the form of noun-class prefixes partly depends on phonological factors, but the main conditioning factor is lexical. For example, the masculine prefix is *ki-* or *k-* before *-calak* 'short', *-arik* 'bad', *-rrinkirr* 'one' and *-artan* 'small', but *na-* before *-rari* 'big' and *-rrungurla* 'heavy'. See Davies (1989:44–46).

20 Prefixes are no longer productive but are in sister dialects. In Kune they remain on large numbers of noun roots; the masculine prefix has been generalised to all adjectives as agreement has been lost.

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2 *Classification and subclassification of the Nyulnyulan languages*

BRONWYN STOKES AND WILLIAM McGREGOR

1 Introduction

1.1 The language and dialect situation[1]

The term *Nyulnyulan* refers to a small cluster of non-Pama-Nyungan languages traditionally spoken on the Dampier Land peninsula and neighbouring regions in the Kimberley mainland, in the far north-west of Western Australia (O'Grady, Voegelin & Voegelin 1966:35–36; McGregor 1988a:49). It consists of around ten named languages, half of which come in two or more dialectal variants. They are given in Table 1, in alphabetical order.

Approximate traditional locations of these and neighbouring languages are indicated in Map 2. Dialects are not shown, nor are language boundaries marked. The major divisions

[1] This is a substantially revised and rewritten version of a joint presentation by the two authors to the Comparative non-Pama-Nyungan Workshop, held at the Australian Linguistics Society Conference, Monash University, September 1989. The final revision was undertaken by the second author alone, who accepts sole responsibility for it. Bronwyn Stokes cannot be held accountable for any inaccuracies of fact or interpretation. Use of the first person singular pronoun in the text specifies the second author.

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Canberra: Pacific Linguistics, 2003.

into three non-Pama-Nyungan families — Nyulnyulan (NN), Bunuban, and Worrorran — and Pama-Nyungan are indicated very roughly by broken lines.

Table 1: The Nyulnyulan languages and their dialectal variants[2]

Languages	Dialectal variants
Bardi	Mainland Bardi, Island Bardi (Metcalfe 1975:2)
Jabirrjabirr Jawi Jukun[3] Ngumbarl Nimanburru	
Nyikina	Big Nyikina, Small Nyikina (Stokes 1982:1)
Nyulnyul	Coastal Nyulnyul (Beagle Bay dialect, called Yowera, according to Bates n.d.), Inland Nyulnyul
Warrwa	
Yawuru	Julbayi (Southern coastal), Marangan (Eastern inland), and Jukun (see above) — Hosokawa (1991:5–6)

1.2 Proposed classification

Our proposed classification is as shown Figure 1. This is a genetic classification, based on application of the comparative method; independent support is provided from a lexicostatistical investigation.

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2 Neither the exact number of varieties nor their linguistic status is entirely certain, and different writers express different opinions. Those who take mutual intelligibility as the primary criterion for identification of dialects of a single language tend to identify only two or three languages, while those who take political and social considerations into account usually identify about ten. Unfortunately, information on most of the language varieties and political groups is quite limited, and it is impossible to deploy either criterion consistently in practice. This is largely because of the post-contact effects on both the sociopolitical situation and the varieties — Bardi, Nyikina, and Yawuru are the only varieties that have even small speech communities (perhaps around fifty, forty, and twenty full-speakers, respectively); the others are effectively moribund, and remembered only. We have adopted a division into languages and dialects that seems, on the basis of the information available to us, to be most consistent with apparent political labelling by speakers of the varieties and their descendants, and, in practical terms, with the organisation of the lexical and grammatical material in the secondary sources. Mutual intelligibility does not seem to be taken into consideration by Aboriginal people of the region. Nor is it easy to determine in multivarietal situations such as is found on the Dampier Land peninsular, and most who would employ this consideration can only base it on intuition from lexical and grammatical similarities.

3 Although Jukun is often treated as a separate language (Bates (n.d.), Nekes and Worms (1953), and McGregor (1988a)), it is, according to Hosokawa (1991:5), a dialect of Yawuru, spoken by three local groups, Jukun, Minyirr and Walman. Nekes and Worms (1953:499) agree that it is 'closely related to Yaoro'.

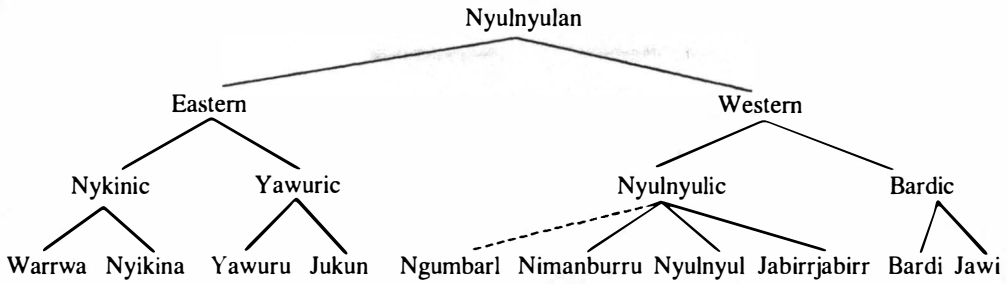

Figure 1: Genetic classification of the Nyulnyulan (dialects omitted)

There is a primary division between Eastern and Western groups; languages of the Eastern group are marked by a single underline in Map 2, those of the Western group, by double underlining.[4] Both groups fall into two subgroups, for which we employ labels based on the names of representative languages, following O'Grady, Voegelin and Voegelin (1966). This classification is somewhat tentative in terms of details, though we are relatively confident of the validity of the main picture. The placement of Ngumbarl is the least certain aspect of the classification: information is severely restricted — in all, only about fifty lexical items are known, and grammatical information is virtually non-existent.

In the remainder of this section we outline sources of data, and make brief mention of previous classifications. The next four sections, which constitute the core of the paper, develop arguments for our classification. Section 2 undertakes a lexicostatistical investigation; sections 3 and 4 apply the comparative method, first at the family level then at the group level. Due to considerations of space, we stop at group level, and do not attempt to justify the proposed subgrouping by the comparative method; this will be dealt with in a future publication. Section 5 identifies the necessary historical phonological processes. Section 6 concludes the paper with a summary and some remarks on possible relations to other non-Pama-Nyungan families.

1.3 Sources of data

The following list indicates the main sources that have been utilised in this investigation, with a few remarks on reliability and extensiveness (see further McGregor 1988a, 1998a):

BARDI The primary and most reliable source is taken to be the recently published dictionary Aklif (1999). Other significant modern sources are Metcalfe (1975, 1979, n.d.), and Nicolas (1998). Nekes and Worms (1953) also contains a good deal of information on the language; this has been treated as a tertiary source.[5]

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4 Based on their relative locations, the two groups might be better labelled Northern and Southern. Our use of the terms Western and Eastern is based on the way that, in our experience, Dampier Land people tend to view the location of the languages: the former group is associated with coastal people who are predominantly located to the west; the latter group is considered to be inland, and hence located in the east.

5 In general, Nekes and Worms (1953) is a quite reliable source of information. Many of the differences between it and more modern sources can be attributed to differences in dialects recorded (e.g. they apparently worked mainly with Mainland Bardi, whereas Metcalfe worked mainly with Islanders). A thorough evaluation of their work is in preparation by one of us (McGregor).

Map 2: Approximate traditional locations of Nyulnyulan and neighbouring languages

JABIRRJABIRR Nekes and Worms (1953) is the major source; a few items also appear in Kerr (n.d.)

JAWI Principal sources of information are Bird (1910), Bird (1915), and Bird and Hadley (n.d.); McGregor also has a few very limited fieldnotes.

JUKUN The main source is Bates (n.d.). Unfortunately, it is not clear how much Ngumbarl is mixed up with the Jukun in Bates' manuscript — Hosokawa (pers. comm.) thinks it is a considerable amount (although there is also much that is peculiarly Eastern Nyulnyulan (henceforth ENN)). This is a significant problem given our tentative placement of the two languages in different groups. Neither Hosokawa (1991) nor Nekes and Worms (1953) provides more than a handful of words, though it appears that Hosokawa has some fieldnotes.

NGUMBARL Virtually no material, the only sources being Kerr (n.d.) and Bronwyn Stokes' fieldnotes, which together contain less than fifty items. Bates (n.d.) perhaps contains additional Ngumbarl material; but unfortunately the linguistic provenance is indicated only in vague terms, and could be any of Nyulnyul, Jabirrjabirr, Nimanburru, or Ngumbarl (see also previous remarks on Jukun).

NIMANBURRU Nekes and Worms (1953) is the only source.

NYIKINA Main sources are Stokes (1982) and Stokes, Johnson, and Marshall (1980).

NYULNYUL Diverse sources mostly of reasonable reliability, including: Tachon (1895 — see McGregor 2000a for an evaluation), Nekes and Worms (1953), and McGregor (1996). Additional are McGregor's and Stokes' fieldnotes.

WARRWA Main sources are McGregor (1994), and McGregor's and Stokes' fieldnotes. Capell (1952/1953) also contains useful information.

YAWURU Hosokawa (1991) and Yawuru Language Team (1998) are considered the most reliable sources; Stokes also has fieldnotes, and a brief description of the language (Stokes n.d.).

1.4 Previous attempts at classification and subclassification

Previous classifications of NN languages were based on typological and lexical considerations. Fr Wilhelm Schmidt, who made the first scholarly attempt at classifying Australian Aboriginal languages (Schmidt 1919), managed — despite serious inadequacies in the data — to distinguish a King Sound group within his Northern group (roughly non-Pama-Nyungan). This corresponds well with NN — amazingly, the boundaries he drew for the King Sound group in his language atlas (Schmidt 1926: Map IV) are fundamentally correct. He even suggested a possible division between coastal and inland 'dialects' of NN.

Likewise, using typological criteria, Arthur Capell also distinguished as a separate group the Dampier Land languages, designating them 'prefixing languages without noun classification' (Capell 1940). He made, however, no intermediate groupings either in that work or any subsequent writings.

O'Grady, Voegelin and Voegelin (1966:35–36) — who seem to have been the first to use the label *Nyulnyulan* in print — distinguish four languages, Nyulnyul (embracing our Nyulnyul, Bardi, Jawi, Jabirrjabirr, Nimanburr, Ngumbarl, and Jukun), Yawuru, Nyikina, and Warrwa. They did not recognise subgroups, although their Nyulnyul corresponds to our Western subgroup plus Jukun. The classification primarily employed lexicostatistical criteria on one hundred word lists (O'Grady, Voegelin & Voegelin 1966:23); though the lexicostatistical investigation of §2 does not support their proposals, and it is likely that other considerations were taken into account (Alpher & Nash 1999:46–47). Subsequent surveys of the 1970s merely repeat this classification, adding little if anything — e.g. Oates and Oates (1970:43), Oates (1975:58–61), and Wurm (1972:124–125). During the 1980s a few linguists commented on possible classifications, without going into details (e.g. Stokes 1982:8, Hudson & McConvell 1984:19, McGregor 1988b:97).

Summing up, previous classifications agree that the NN languages constitute a distinct family-like unit, consisting of between two and eight languages. None proposes intermediate

groups or subgroups. Criteria employed were typological, lexical, and/or lexicostatistical; the comparative method has not previously been applied.

2 Lexicostatistical classification

The lexicostatistical method has been heavily criticised on a number of fronts, including Australianist linguistics, where it has been particularly severely condemned by R.M.W. Dixon in diverse publications, most recently Dixon (1997:35–37). Whilst being mindful of the criticisms — many of which I consider valid — there is increasing evidence that the method is not totally unreliable, and can be used in conjunction with other methods, including the comparative method. As Paul Black observes (see also Embleton 2000:154–156):

> It is not surprising that we have no single reliable means of making inferences about prehistory [and thus about genetic relations — WM & BS]. In such a case it seems best to consider all of the evidence available. Lexicostatistics and the traditional use of the evidence of shared innovations complement each other in a valuable way because they are based on quite different sets of assumptions. When we are lucky enough to find that both approaches support the same results, we can be very confident that we are on the right track. (Black 1997:56)

The two methods do in fact yield comparable results for the NN languages, and thus we have support from both for the proposed classification. This is the motivation for the inclusion of the present section.

Seventeen languages were selected for the investigation, the ten NN languages, plus seven other languages from the region. These include four adjacent languages, Karajarri, Walmajarri, Gooniyandi, and Unggumi (two others, Mangala and Unggarrangu were omitted due to lack of information), and three languages at a slightly greater remove, Nyangumarta, Kukatja, and Ngarinyin (chosen primarily because lexical information is reasonably extensive and reliable).

A list of two hundred and twenty meanings was drawn up for the investigation, on the understanding that it is preferable to have the order of two hundred items if one wishes to draw inferences about subgrouping (David Nash pers. comm.).[6] These 220 items will be referred to as 'core vocabulary' in this section. For almost all of the chosen languages there were some gaps in the information, but for the better documented ones these were few in number; for most of the others, at least one hundred and eighty meanings were represented in the available corpora.

The results of the pair-wise comparison of the seventeen languages are shown in Table 2. Two values are given in each cell: first, an unreduced fraction indicating the actual number of shared items in relation to the actual number of common meanings; and following that, after a colon, this value converted to a percentage.

Before discussing the findings, it is necessary to make two remarks on methodological decisions made in arriving at the figures, since they were at times at variance with standard lexicostatistical practice.

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6 This list was based on the 151 item list of Alpher and Nash (1999:53–56), with a few emendations to tailor it to the NN languages. To this were added another seventy meanings, sixty of the most relevant additional items from the 215 item list of Bergsland and Vogt (1962:117–119), and another ten that were considered appropriate for NN languages.

Table 2: Lexicostatistical comparison of Nyulnyulan and some nearby languages

	Jw	Bd	Nnl	JJ	Nm	Ngb	Jk	Yw	Nyk	Ww	Kj	Ny	Wl	Kk	Ug	Ngr
Bd	171/ 201; 85%															
Nnl	127/ 203; 63%	149/ 216; 69%														
JJ	111/ 204; 54%	136/ 215; 63%	194/ 218; 89%													
Nm	116/ 188; 62%	142/ 200; 71%	190/ 203; 94%	177/ 203; 87%												
Ngb	24/ 45; 53%	28/ 45; 62%	33/ 45; 73%	36/ 46; 78%	34/ 44; 77%											
Jk	75/ 192; 39%	85/ 199; 43%	110/ 200; 55%	105/ 198; 53%	97/ 186; 52%	34/ 45; 76%										
Yw	61/ 201; 30%	76/ 210; 36%	88/ 211; 42%	87/ 211; 41%	77/ 198; 39%	29/ 45; 64%	112/ 195; 57%									
Nyk	57/ 200; 29%	68/ 211; 32%	81/ 211; 38%	81/ 211; 38%	73/ 197; 37%	28/ 46; 61%	96/ 195; 49%	108/ 209; 52%								
Ww	57/ 199; 29%	73/ 208; 35%	88/ 210; 42%	82/ 210; 39%	79/ 196; 40%	29/ 45; 64%	94/ 195; 48%	97/ 207; 47%	157/ 207; 76%							
Kj	22/ 194; 11%	21/ 197; 11%	32/ 199; 16%	31/ 198; 16%	29/ 181; 16%	14/ 46; 30%	29/ 183; 16%	71/ 192; 37%	43/ 190; 23%	34/ 190; 18%						
Ny	17/ 192; 9%	11/ 193; 6%	19/ 196; 10%	21/ 192; 11%	18/ 178; 10%	6/ 45; 13%	20/ 177; 11%	39/ 186; 21%	20/ 184; 11%	14/ 186; 8%	110/ 188; 59%					
Wl	13/ 197; 7%	8/ 198; 4%	12/ 198; 6%	16/ 195; 8%	10/ 182; 5%	4/ 46; 9%	11/ 185; 6%	19/ 187; 10%	32/ 189; 17%	20/ 168; 12%	41/ 200; 21%	40/ 190; 21%				
Kk	16/ 213; 8%	13/ 213; 6%	13/ 214; 6%	11/ 215; 5%	8/ 202; 4%	2/ 46; 4%	10/ 197; 5%	13/ 208; 6%	16/ 207; 8%	11/ 204; 5%	30/ 197; 15%	51/ 190; 27%	63/ 198; 32%			
Ug	10/ 168; 6%	10/ 171; 6%	16/ 178; 9%	17/ 179; 9%	14/ 166; 8%	7/ 44; 16%	12/ 167; 7%	20/ 171; 12%	22/ 171; 13%	22/ 173; 13%	8/ 174; 5%	6/ 169; 4%	23/ 178; 13%	8/ 182; 4%		
Ngr	11 194 6%	9 183 5%	14 192 7%	13 193 7%	13 178 7%	5 46 11%	8 175 5%	23 195 12%	12 184 7%	18 183 10%	6 187 3%	6 185 3%	12 191 6%	9 191 5%	62 171 36%	
Go	10 211 5%	7 200 4%	12 211 6%	11 211 5%	13 198 7%	5 46 11%	10 195 5%	21 203 10%	25 202 12%	21 202 10%	10 199 5%	11 189 6%	34 197 17%	25 213 12%	25 179 14%	17 191 9%
	Jw	Bd	Nnl	JJ	Nm	Ngb	Jk	Yw	Nyk	Ww	Kj	Ny	Wl	Kk	Ug	Ngr

First, a given gloss frequently has multiple lexemes in a given language. Contrary to standard procedure (Embleton 2000:148) all multiple lexemes were admitted, and a single score recorded for a pair of languages provided at least one of the alternatives was shared. This practice was adopted — as also by Alpher and Nash (1999) — since it is usually impossible to decide which of the apparent synonyms is the 'best fit'.

Second, borrowings were not excluded. This decision was taken partly because in most cases it is difficult, on present knowledge, to distinguish what is borrowed from what has been retained (according to McGregor 2002: Chapter 8, even very ancient-looking putative cognates may be borrowings). And to make the distinction it is necessary to employ the comparative method, which would be fine for NN, but to do so for the other families represented is obviously beyond the scope of a single article. In fact, I suspect it is not unlikely, given the apparent genetic distance between the families, that most genuine cognates would be obscured by phonological and semantic change, and that many putative cognates are comparatively recent loans. In practice, then, I scored as cognates look-alike pairs such as Nyulnyul *kujarr* 'two' and Kukatja *kutjarra* 'two', even though it is quite on the cards that the former is a recent borrowing that has spread right through the NN languages. Also included were pairs such as Gooniyandi *gooji* 'bone' and Nyulnyul *kinyj* 'bone', on the basis of their phonemic and semantic similarity, although no reconstruction of Proto Bunuban-Nyulnyulan has yet been undertaken. This and the previous decision have the effect of increasing the ratios of cognates.

Even a cursory examination of Table 2 reveals that the NN languages share far more cognates with one another than with any other languages. Thus, with just two exceptions, every pair of NN languages shares at least 30% of their core vocabulary — and the two exceptions are only just below this figure, both 29%. By contrast, only two pairs involving a NN and another language share 30% or more core vocabulary. Examining the percentages in relation to the geographical locations of the languages it is clear that the few cases in which more than 20% core vocabulary is shared involve NN languages from the southern portion of the region, and the two Pama-Nyungan languages that are spoken just to the south of them, Karajarri and Nyangumarta. The percentage of shared core vocabulary items drops sharply as geographical distance increases, and quickly reaches 10% and lower. Looking at the shared figures for other non-Pama-Nyungan languages reveals figures ranging from a minimum of 4% for geographically separated languages to 10%–13% for nearby languages. (The maximum of 16% for Ngumbarl and Unggumi should not be taken seriously, as the actual numbers involved are too small to be considered meaningful — see below.)

The figures within the NN languages themselves seem also to support the proposed grouping. Jawi, Bardi, Nyulnyul, Jabirrjabirr, and Nimanburru all share high percentages of core vocabulary, consistently exceeding what they share with Jukun, Yawuru, Nyikina, and Warrwa. The latter languages also tend to share higher percentages among themselves than with the other five languages, though this is not particularly striking. Ngumbarl is somewhat problematic, sharing as it does roughly the same percentage of core items with all NN languages; this is doubtless a consequence of the limited corpus, that renders comparisions unreliable.

To verify the regularities just commented on, and to extract further information from the lexicostatistical data, cluster analysis software was employed, using the shared cognate ratios

between each pair of languages.[7] The results are shown in Figure 2, in which the *x* axis represents the degree of lexical similarity between languages and clusters of languages, varying from a minimum of 0 (completely disjoint) to a maximum of 1 (identity). Again Ngumbarl is omitted. This agrees very well with our genetic tree model (Figure 1), the only difference being in the addition of one intermediate node, grouping Nyulnyul and Nimanburru together in distinction from Jabirrjabirr.

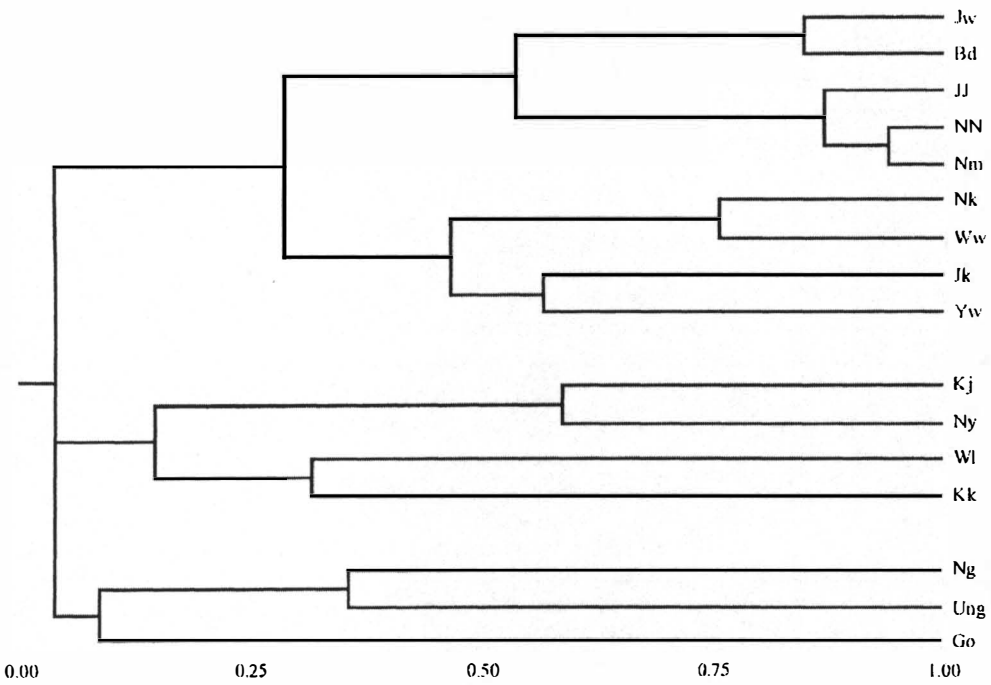

Figure 2: Groupings and subgroupings generated by cluster analysis (length of branch indicated presumed genetic distance)

The results for the higher-level groupings are also in good agreement with generally accepted classification into families. (The grouping of Gooniyandi with the Worrorran languages is doubtless due to the small number of languages involved — had other languages been included, the level at which clustering is discernible would have dropped considerably.) The family-like groups identified by this procedure are clearly divergent in their core lexicons.

Given that we did not exclude borrowings, it seems that stability in the core lexicons of the NN languages is sufficient to counterbalance the effects of external loan-replacement. It seems plausible that the lower proportions of shared core vocabulary amongst the ENN languages are at least in part a reflection of borrowing between geographical neighbours. Lying in the buffer zone with languages of three other families they would be expected to show higher rates of loans with their non-Nyulnyulan neighbours than the more isolated WNN languages. For this reason we should be cautious of construing the length of dendrites as indicators of genetic distance or time depth.

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7 The program was made available to me courtesy of Bo Sommerlund, Institut for Psychology, Aarhus Universitet.

3 Genetic classification: application of the comparative method at the family level

In this section we apply the comparative method to reconstruct features of Proto Nyulnyulan (pNN); we also identify shared aberrations that distinguish NN from other language families in Australia. Following this, in §4 we present evidence for the primary grouping of the family into ENN and WNN (Western Nyulnyulan) by identifying shared innovations, primarily lexical. As we will see, however, it is quite difficult to identify convincing innovations in either group; the best that can be done is to single out some probable innovations. Throughout most of the discussion we ignore Ngumbarl.

The reconstruction of pNN is organised as follows: phonology (§3.1); lexicon (§3.2); the pronominal system (§3.3); nominal morphology (§3.4); and verbal morphology (§3.5).

3.1 Proto Nyulnyulan phonology

It is a reasonably straightforward exercise to reconstruct an inventory of phonemes for pNN; this is the quite unexceptional (for an Australian language) system shown in Tables 3 and 4. The only unusual segment in any language is the mid back vowel *o* in Bardi (and presumably Jawi), which derives historically from vowel–consonant–vowel sequences (see §5.4 below). It clearly should not be reconstructed for pNN. The only unresolved problem is whether we should identify long high vowels as separate proto-phonemes, or as sequences of vowel followed by glide. I have tentatively opted in favour of the long vowel solution.

Table 3: Proto Nyulnyulan consonants

	Bilabial	Apico-alveolar	Apico-postalveolar	Lamino-palatal	Dorso-velar
Stops	**b*	**d*	**rd*	**j*	**k*
Nasals	**m*	**n*	**rn*	**ny*	**ng*
Liquids		**l*	**rl*	**ly*	
Tap/Trill		**rr*			
Glides	**w*		**r*	**y*	

Table 4: Proto Nyulnyulan vowels

	Front		Back	
	Short	Long	Short	Long
High	**i*	*?*ii*	**u*	*?*uu*
Low			**a*	**aa*

It is beyond the scope of the present paper to discuss pNN phonotactics. We simply mention, without going into detail, that on the basis of the reconstructed lexicon (see Appendix 1) it seems to have been not too unusual for an Australian language. The majority of lexical roots begin with a consonant, and end with a vowel; most are bisyllabic or longer. Just a few roots may have been vowel-initial, the best candidates being **a* 'and' and the bound root **-alma* 'head'. For the small number of roots that have been reconstructed with initial *yi* and *wu* (e.g. 'father', 'dog', 'give', 'water') it is difficult enough to decide whether reflexes in the modern languages have initial glides or vowels, let alone in pNN! They have been tentatively reconstructed with initial glides. A rather large proportion of pNN roots, however, ended in consonants, most frequently liquids and the apical glide /r/; a few roots ended in an apical nasal, even fewer in an apical stop. There is also a small number of roots ending in consonant clusters, primarily nasal stop clusters, both homorganic and heterorganic.

3.2 Proto Nyulnyulan lexicon[8]

Using the standard method of reconstruction an initial set of some two hundred putative pNN words was established; these are listed in alphabetical order in Appendix 1, which also specifies which modern languages reflexes can be found in. Space considerations preclude inclusion of the actual forms; it is planned to publish these separately at a later date, when the investigation is further advanced.[9] A number of reconstructed forms seem to be peculiarly NN, including core vocabulary items such as: **bana* 'when', **buru* 'camp, place, country', *-JALA 'see', *-JALKU 'fall', *-JANBU 'tread, trample', **kalbu* 'up, above', **-lababa* 'ear', **-mbala* 'foot', *-RLI 'eat', **wamba* 'man', **wula* 'water', and **yila* 'dog'.[10]

The reconstructed pNN items differ somewhat in terms of certainty: in the best cases reflexes can be found in every, or almost every, language. In other cases reflexes are found in only about half of the languages. A form was tentatively taken as pNN if reflexes could be found in modern languages from both branches, provided that there was some geographical separation between them. But if reflexes could only be identified in a few neighbours (e.g. just Nyulnyul, Nimanburru, Jabirrjabirr, and Jukun) this was not taken as a candidate pNN lexeme, since it could easily have been borrowed. On the other hand, the

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8 The following abbreviations are used: 1,2,3, 1+2 – first, second, third, first and second person; ABL – ablative; CAR – cardinal; COM – comitative; ERG – ergative; LOC – locative; OBL – oblique. Rather than adopting a single consistent phonemic orthography for all languages, we employ the orthographies used by the various language communities, or recommended by the Kimberley Language Resource Centre (Kimberley Language Resource Centre (2000)). These orthographies in most instances are phonemic — or almost so — and differ from one another and Australian standards in relatively minor ways. The main point to note is that *oo* in Bardi and Nyikina orthographies represents the high back vowel written *u* in the other systems; in the Bardi system it also represents the long version of this vowel. Following a convention established in Stokes (1982), we cite inflecting verb roots and stems in capital letters. Names of languages, language groups and proto-languages are abbreviated only in tables and figures and are set out in the Abbreviation section at the beginning of this book.

9 A few of these items are found in one or two non-Nyulnyul neighbours, such as Karajarri or Nyangumarta, but not in more distant Pama-Nyungan (or Marrngu) languages. Probably most are borrowings from NN.

10 I am currently revising and editing Nekes and Worms (1953) for publication; many of the modern forms will be included in that work, in a more accessible form than in the original microfilm.

existence of reflexes in Bardi and Warrwa — from opposite extremes of the Nyulnyulan region — was taken as firmer evidence that the reconstructed form was pNN.

Even when reflexes are widely dispersed there is room for uncertainty: although the lowest rates of shared core vocabulary are found in such extreme pairs, borrowing cannot be dismissed. For, according to one of the last two speakers of Warrwa, there was (in historical times at least) contact between Warrwa and Bardi people, through visits of the former to the tip of the Dampier Land peninsular. The presence of similar lexemes in just these two languages (and none of the intermediate ones) might not then be the result of retention from pNN but from borrowing. As mentioned already, even when reflexes can be found in all NN languages there can remain a strong suspicion that the item was borrowed extensively; this is the case for reconstructions such as **kujarra* 'two' and **ngamarna* 'breast'. More clearly, terms for various post-contact items have been borrowed throughout the family — e.g. *bambu* 'didgeridoo' (not a traditional instrument in the Dampier Land region) — but obviously should not be reconstructed for pNN.

The attested forms in the modern languages show, of course, a number of phonological and semantic differences from the proto-forms listed in Appendix 1, and their glosses. Many (not yet all) of the differences can be accounted for by regular rules of phonological change; these also permit identification of loans at various stages of NN history.

3.3 Proto Nyulnyulan system of free pronominals

The pronominal systems of modern NN languages appear to be identical in terms of the major person and number features, and the distinct case forms. The modal qualification in the previous sentence is necessitated by the severe lack of information on a few languages; we can only guess that their systems were identical to those of the better attested languages. The systems are of the Ilokano type (Conklin 1962; Greenberg 1988), also found in various non-Pama-Nyungan languages of the Northern Territory — though not in other Kimberley languages. Four person categories are distinguished: first person (1); first and second person (1+2); second person (2); and third person (3). Two numbers are distinguished in the pronominal roots, minimal (smallest number consistent with a particular person category) and augmented (one or more individuals additional to the minimal number for a category). Further distinctions are made in ENN languages by number suffixes to the augmented forms. Each language shows two distinct roots for each person-number category, a cardinal form that is found in most syntactic environments (basically, where it is the head of an NP), and an oblique form, used in indicating a pronominal possessor (basically where the pronoun is a dependent of a noun in an NP). The cardinal and oblique forms generally differ in initial segment, the latter being characterised by an initial *j*.

Table 5 shows the attested forms of the free cardinal and oblique pronouns in each language; because of uncertainties in the corpora, it is in most cases impossible to be sure whether pronominal forms are Ngumbarl or Jukun, and hence the two columns are collapsed almost everywhere. Our tentative reconstructions of the pNN free pronouns are given in Table 6. Three reconstructions are questionable — the two 1+2 augmented forms and the 3 minimal cardinal form — while there remain uncertainties in reconstructions of some segments in a few other forms.

Table 5: Major pronominal forms in Nyulnyulan languages

			Jw	Bd	Nnl	JJ	Nm	Ngb	Jk	Yw	Nyk	Ww
Minimal	1	CAR	*ngayoo*	*ngayoo*	*ngay*	*ngay*	*ngay*	*ngayu*	*ngayi*	*ngayu*	*ngayoo*	*ngayu*
		OBL	*ngajana*	*(nga)jana*	*jan*	*jan*	*jan*		*ngayjanu*	*janu*	*ngajanoo*	*ngajanu*
	1&2	CAR	*ay ~ ayol*	*ayoo*	*yay*	*yay*	*yay*		*jayi*	*yayu*	*yayoo*	*yawu*
		OBL	*joowa*	*jowa*	*jay*	*jay*	*jay*		*?yayini*	*jaw(u)*	*jaw(oo)* (SN) *yajiya* (BN)	*jawu*
	2	CAR	*joo*	*joo*	*juy*	*juy*	*juy*		*juw(u)*	*juyu*	*joowa*	*juwa*
		OBL	*jiy(a)*	*jiya*	*jiy*	*jiy*	*jiy*		*jiya*	*jiya*	*jiya*	*jiya*
	3	CAR	*kinyingk*	*ginyingg(i)*	*kinyingk*	*kinyingk*	*kinyingk*		*kinying*	*ginyangka*	*kinya*	*kinya*
		OBL	*jina*	*jina*	*jin*	*jin*	*jin*		*jina*	*jina*	*kinyjina*	*jina*
Augmented	1	CAR	*arrod(oo)*	*arroodoo*	*yarrad*	*yarrad*	*yarrad*		*yarrida*	*yarr-*	*yarrka*	*yarra*
		OBL	*jada*	*jarda*	*jarrad*	*jarrad*	*jarrad*		*jarrada*	*jarra*	*yajarra*	*jarra*
	1&2	CAR	*arrodol*	*arridil*	*yadir*	*yadir(r)*	*adil*		*yadir(r)i*	*yadiri*	*yarrjoo*	*yadirr*
		OBL	*jada*	*jarda*	*jadir*	*jadir(r)*	*jarrad*			*jayrda*	*jayida*	*jadirr*
	2	CAR	*koorr*	*goorr*	*kurr*	*kurr*	*kurr*		*kurr-*	*kurr-*	*koorrka*	*kurra*
		OBL	*jookarra*	*joogarra*	*jungkarr*	*jungkarr*	*jungkarr*			*jungkarra*	*joongkarra* (SN) *koojoongkoorra* (BN)	*jungkarra*
	3	CAR	*(y)irr*	*irr*	*yirr*	*yirr*	*yirr*		*yirra-*	*kangajun(u)* *~ yirr-*	*yirrka*	*yirra*
		OBL	*jirra*	*jirra*	*jirr*	*jirr*	*jirr*			*jirra*	*yijirra*	*jirra*

Table 6: Reconstructed free pronouns of Proto Nyulnyulan

	minimal		augmented	
	cardinal	oblique	cardinal	oblique
1	**ngayu*	**janu*	**yarr*	**jarra*
1+2	**yayu*	**jayu*	**yadir(r)*	**jadir(r)*
2	**juya*	**jiya*	**kurr*	**jungkarra*
3	**kinya* ~ **yina*	**jina*	**yirr*	**jirra*

Reflexes of pan-Australian first person minimal **ngayu* are attested in all NN languages. The oblique form consistently involves *jan* (Nyulnyulic), *jana* (Bardic), or *janu* (other languages); **janu* seems the most likely source. There is an initial *nga* in Bardi and ENN languages other than Yawuru. Should the pNN form be reconstructed as **ngajanu* or **janu*? Two things suggest the shorter form. First, loss of an initial syllable seems somewhat implausible given that it would almost certainly have borne stress. Second, a case can be made that *ngajanu* ~ *ngajana* could have been independently innovated. The WNN languages have a possessive construction involving the cardinal form of the pronoun denoting the possessor linked to the possessed nominal by the appropriate oblique pronominal (McGregor 2001). If this became the usual means of expressing possession for the first person singular in some language, it could easily have happened that the oblique form fused onto the cardinal form (they are usually contiguous and occur in that order). Thus, in Jukun Bates consistently represents the form as *ngai-jannoo*, and in Jawi Bird consistently represents it as *ngai jenna* — probably representing *ngajana*.

Reconstruction of **yayu* as the 1+2 minimal cardinal pronoun is fairly straightforward, the only unexpected modern forms being Warrwa *yawu*, which involves replacement of the palatal glide by the peripheral, and the final *l* of one alternant in Jawi. The proto-form for the oblique 1+2 minimal is identical with the cardinal form except that — like all oblique forms — it involves an initial *j*. There are a few irregularities in the modern forms: not only Warrwa but also Yawuru, Small Nyikina, Bardi, and Jawi show the *y* ~ *w* replacement. And Big Nyikina has *yajiya*, which seems to involve the first syllable of the cardinal pronoun (*ya*) plus the second person minimal oblique pronoun (*jiya*) (see further below). Small Nyikina also has the irregular and rare variant *jarrajaw*, alongside regular *jaw(oo)*.

The second person minimal is a little less regular in the modern languages, but can still be plausibly reconstructed as **juya*. The third person minimal is reconstructed as **kinya* or **yina* (see below for further discussion). Most modern languages have a reflex of the former, involving the augment *-angka* (Yawuru) or *-ingk(i)* (WNN and Jukun); the short form is found only in Nyikina and Warrwa. This form is identical with an endophoric determiner 'this, the aforementioned'; it can, however, be distinguished from the latter by virtue of the irregular oblique *jina* ~ *jin* — the determiner is invariant in root form. Again in Nyikina we find the innovation *kinyjina*, formed in the same way as the 1 minimal oblique form.

The third person augmented forms **yirr* (cardinal) and **jirra* (oblique) show mostly expected reflexes in the modern languages. Yawuru has two cardinal forms: the expected reflex of **yirr*, along with irregular *kangajun(u)*. The former is used for dual or paucal number, and is always followed by the appropriate number suffix; the latter — which has the same form as the intensive form of the distal demonstrative *ka* — is used for other numbers.

The cardinal form in other ENN languages always shows a post-root augment: *-a* in Warrwa and perhaps Jukun, *-ka* in Nyikina. The oblique root shows an initial *j* in all languages except Nyikina which, as usual, has the initial CV of the cardinal form prefixed to the *j*-initial form.

Similarly for the second person augmented forms. Reflexes of cardinal **kurr* and oblique **jungkarra* show up in forms parallelling the reflexes of the corresponding third person forms. The only qualifications are: (i) in Small Nyikina the initial *ku* of the cardinal is not prefixed to the *j*-initial form, although it is in Big Nyikina; and (ii) the homorganic nasal–stop cluster has reduced to the plain stop in Bardic (see §5.5 below).

Reflexes of 1 augmented **yarr* and **jarra* in Yawuru, Nyikina, and Warrwa are precisely as expected given the two augmented forms just discussed (the prefixed *ya* to the oblique form occurs in both dialects of Nyikina). In WNN, however, we find the augment *-ad* to both the cardinal and the oblique forms in Nyulnyulic, and *-(o)odoo* to the cardinal in Bardic. Furthermore, Bardi and Jawi show the irregular oblique *ja(r)da* — identical with the 1+2 augmented form (see also Nekes 1939:144). Bates' manuscripts give *yarreeda* and *jarrada* for the cardinal and oblique forms respectively; given these augments, one is tempted to consider these as more likely Ngumbarl than Jukun.

There are many complexities in the 1+2 augmented forms. On the basis that it occurs in five languages, not all contiguous, it seems reasonable to postulate **yadir(r)* as the pNN cardinal form — the final segment is indeterminate between *r* and *rr* (see §5.5). Nimanburru *adil* is a not implausible reflex, involving loss of the initial glide, and a lateral corresponding to the *r* or *rr* of the other languages. This leaves the Bardi, Jawi, and Nyikina cardinal forms as irregular.

Three languages — Nyulnyul, Jabirrjabirr, and Warrwa — have oblique forms corresponding to the cardinal forms via the regular *y* ~ *j* alternation. Therefore **jadir(r)* could be the proto-form. This is, however, a less certain reconstruction than the cardinal form, and we must conclude that most languages have restructured their free oblique 1+2 augmented pronoun. Indeed, in three languages — Bardi, Jawi, and Nimanburru — the 1 augmented and 1+2 augmented have collapsed: in the former pair both have been replaced by a new irregular form, in the latter, the 1 augmented has expanded to cover 1+2 augmented.

Assuming the reconstruction of Table 6, most modern pronominal forms are reflexes of the proto-forms. By and large, the forms in the WNN languages show the effects of regular historical phonological processes. The ENN languages, by contrast, show few phonological changes, but more evidence of form-restructuring, especially in the augmented number. Nyikina also shows a good deal of renovation in the oblique pronouns, using as a prefix the initial syllable of the corresponding cardinal pronoun.

The 1 augmented forms, and especially the 1+2 augmented forms, show most evidence of restructuring. For 1 augmented, it has been by suffixation, in some cases by a regular form associated with augmented pronominals, in other cases by an apparently meaningless form. The cardinal 1+2 augmented has apparently been constructed on a base represented by the proto-form of the 1 augmented in Nyikina, Bardi, and Jawi. In Nyikina the first syllable of the second person minimal pronoun seems to have been added as a suffix, a perfectly plausible development. In Bardi and Jawi *-idil* ~ *-odol* (unknown provenance) has been added.

Only three languages show reflexes of the proto-forms of the oblique 1+2 augmented pronouns. We have already described the irregular modern forms in three other languages. This leaves us with the forms in Nyikina and Yawuru, both of which appear to have been constructed on a base of the oblique 1+2 minimal — which seems reasonable — to which has been added *-ida* or *-rda*, respectively.

Why should the 1+2 augmented be so unstable in NN?[11] The obvious answer is that the systems of bound pronominal prefixes to nominals, and to verbs in certain mood categories are what Greenberg (1988) has referred to as Assiniboine rather than Ilokano — that is, they have a 1 minimal form ('I'), a 1+2 minimal form ('me and you', the speaker–hearer dyad), and a 1 non-singular form (covering all other configurations involving 1).

Examination of the proto-forms of the 1 and 1+2 categories reveals that it is not implausible to suppose that at some stage in pre-pNN the system made a simple number contrast in the first person between singular **ngayu* (cardinal) ~ **janu* (oblique) and non-singular **ya* (cardinal) ~ **ja* (oblique).[12] The 1+2 minimal proto-form could have been formed by the addition of the second person singular **ju* (which subsequently lenited to **yu*), and the 1 augmented by the addition of the widespread non-Pama-Nyungan plural marker **rr*. Perhaps 1+2 augmented proto-forms were formed in a similar way to the modern Nyikina form, by addition of the second person non-singular **nurru* (one of two widespread second person non-singular forms in non-Pama-Nyungan languages — Capell and Coate (1984:99–104), and Blake (1988)). If so, the pNN forms would have been **yadirr* and **jadirr*, deriving from **yarr-nurru* and **jarr-nurru* by a plausible rule *rr-n* > *d* (attested as a morphophonemic process in Nyikina — Stokes (1982:xxvi, 206, 208)). Unfortunately, this leaves unexplained the final glide *r* of Warrwa (and possibly other languages).

Most modern oblique free pronominals begin with a palatal stop, which could be a reflex of a pre-pNN genitive prefix**ji-* — identical with the reconstructed pNN dative postposition. A couple of morphophonological rules could then be invoked that account for many of the modern forms: (a) **ji-yV* > *jV*; and (b) **ji-ku* > *jungka*. (a) is phonologically plausible; (b) is plausible for functional reasons: it serves to keep distinct forms in paradigmatic opposition that might otherwise have collapsed if lenition processes had occurred. And various modern languages show similar morphophonemic rules: a similar rule of prenasalisation is attested in second person pronominal prefixes to verbs in nearby Gooniyandi (McGregor 1990: 103–104); and in Ngarinyin comparable rules are found in certain morphologically restricted environments (Rumsey 1982:23).

Two modern obliques are clearly irregular under this scenario: the first and third person minimals. We have no explanation for the first person form. However, it is possible — though of course not certain — that the third person **kinya* is a post-pNN borrowing: a demonstrative or determiner with a similar form is found in a wide scattering of languages, Pama-Nyungan and non-Pama-Nyungan. An alternative, and in my view preferable, candidate for the pNN (or perhaps pre-pNN) third person minimal pronoun is **yina*, a

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11 The same 'instability' is apparent in the recent history of Nyulnyul itself. The category was entirely lost in the speech (and competence) of the last speaker, who consistently extended the 1 augmented forms to cover it. The 1+2 minimal was minimally present in her speech, though 90% of the time it was covered by the 1 augmented, which had effectively become a first person non-singular pronominal.

12 This is put forward as a possible scenario, that accounts for the forms of the bound pronominal prefixes as well as the free pronominals. Other scenarios are of course possible, as Nick Evans has pointed out to me.

plausible reflex of which exists in at least Nyulnyul, in the demonstrative *in* 'this' (McGregor 1996:17, 23).[13] This form not only plausibly accounts for the third person minimal oblique **jina*, but also for various bound forms: the nominal prefix *ni-* (McGregor 1995), the verbal prefix allomorph *yi-*, and the conjugation marker *na-* ~ *ni-* ~ *n-* (see §3.5 below).

Finally, plausible cognates for virtually all pNN cardinal pronominals can be found in the non-Pama-Nyungan region. The first person singular is, of course, pan-Australian. Forms with initial *ya* are not unusual in some first person non-singular category in non-Pama-Nyungan; nor are non-singular second person forms like *kurr*. The second person singular is more distinctive, although forms involving a laminal stop or nasal are common. Thus, many Kimberley languages have the form *ngVnyjV* (where V is a high vowel); and bound forms in various languages show a laminal stop or nasal (e.g. Ngarinyin ergative prefixes *ja-* ~ *jan-*, and absolutive *nyin-* ~ *nyun-* (Rumsey 1982:83, 86), and Dalabon absolutive prefix *dja-* (Nick Evans pers. comm.)). Possible cognates of the third person minimal pronominal or demonstrative **yina* include the homophonous pronominal and endophoric determiner *niyi* in Gooniyandi (McGregor 1990:144), and the Bunuba pronominal *niy* (Rumsey 2000:71). And further afield we find the Jaminjung distal demonstratives *yina(ya)* and *(ngi)yina* (Schultze-Berndt 2000:49). The third person augmented **yirr* might be cognate with the widespread non-Pama-Nyungan *birri* via loss of the initial segment, followed later by glide epenthesis. Peculiarly NN are the oblique pronominals.

3.4 Proto Nyulnyulan nominal morphology

Nominal morphology is rather simple. There is a small set of derivational suffixes with meanings 'expert at', 'characterised by', 'collective', and so on. Little inflection is found; nominals are not inflected for case. Instead, like other languages of the region, each NN language has a set of postpositions that mark the grammatical relation of an NP in the clause or NP to which it belongs. These are phrase-level enclitics that normally occur one per phrase, attached to its first word. The only real inflection is by pronominal affixes to a small set of fifty or so bound nominals, and this is found in only some languages. In this section we first attempt to reconstruct pNN postpositions, then pronominal prefixes; due to considerations of space derivational morphemes are not taken into account.

Table 7 lists the main postpositions in each language, so far as they are known, together with indication of their allomorphic variants.[14] These are the postpositions that are found in most languages (except a few for which data is inadequate); a handful more, conveying more specific meanings, are found in some languages.

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[13] Nekes and Worms (1953) give as alternative third person singular pronouns *yen* (Jabirrjabirr and Nyulnyul), *en* (Bardi), *yona* (Yawuru), and *yena* (Nyikina). Modern sources for the last three languages do not list these forms as either pronouns or determiners, though it seems improbable that Nekes and Worms would have invented them.

[14] Two alternants shown in the table are dialectal, the Yawuru allative and ablative (ABL_1): the forms with final vowel occur in the inland dialect, the forms without, in the coastal dialect.

Table 7: Major postpositions of the Nyulnyulan languages

	Jw	Bd	Nnl	JJ	Nm	Ngb	Jk	Yw	Nyk	Ww
ERG	*-nim*	*-nim*	*-in*	*-in*	*-in*	*-ni*	*-n ~ -na*	*-ni ~ -nyi ~ -rni -nimaa*	*-ni*	*-na ~ -ma ~ -nma*
LOC	*-on*	*-goon ~ -oon ~ -on ~ -ngon*	*-uk ~ -ik*	*-uk*	*-uk*		*-kun*	*-gun ~ -gan*	*-kan ~ -an*	*-n ~ -an ~ -ana ~ -kan ~ -wan*
ALL		*-ngan*	*-ung*	*-ung*	*-ung ~ -ing*		*-ngan*	*-ngarn ~ -ngana*	*-ngana*	*-ngana*
ABL_1		*-go ~ -o*	*-kun ~ -ikun*	*-kun(g) ~ -kab*	*-kab*		*-kab ~ -kabu*	*-gab ~ -gabu*	*-kaboo ~ -aboo*	*-nkawu ~ -kawu*
ABL_2	*-jun*	*-yoon ~ -joon*	*-jun ~ -ijun*	*-jun*	*-jun*		*-junu*	*-junu*	*-joonoo*	*-yunu ~ -junu*
DAT								*-yi ~ -ji*	*-yi ~ -ji*	*-yi ~ -ji*
CAUS		*-ji ~ -i*	*-ij*	*-(i)j*	*-ij*					
COM		*-nyarr*	*-nyirr ~ -inyirr*	*-nyirr*	*-nyirr*			*-ngany*	*-barri*	*-barri; -nyarri*
INST		*-nga ~ -ng*	*-ang*	*-ang*	*-ang*			*-barri*	*-ngany*	*-ngany*
PER			*-mirr ~ -imirr*	*-mirr*	*-mirr*				*-marroo*	*-marru*

There can be little doubt that most of these postpositions are cognates, and that plausible reconstructions are possible for most. These are shown in Table 8; a single form is given for each, though it is likely that (as in the modern languages) initial palatal, bilabial, and velar stops alternated with the corresponding glides.

The presence of *m* in one allomorph of the ergative postposition in four languages from opposite extremes of the NN region attests to its presence in the proto-form, which has accordingly been tentatively reconstructed as **-nima*. Admittedly there is little to justify the final vowel: it could just as easily have been innovated in Yawuru and Warrwa as lost in Jawi and Bardi. Other than loss of the final syllable (or segment) in most allomorphs in most languages, the only noteworthy thing is that Nyulnyulic languages have metathesised the CV sequence, as they have in a number of other postpositions. The nearest language that shows an ergative marker with anything like the NN shape is Jaminjung, where it is *-ni ~ -di* (Schultze-Berndt 2000:54); other Mindi languages show a similar form (Chadwick 1997:97–99). However, the *m* seems to be a peculiarity of NN.

Table 8: Reconstructed Proto Nyulnyulan postpositions

	Proto Nyulnyulan postpositions
ERG	**-nima*
LOC	**-kun*
ALL	**-ngana*
OBL?	**-ung*
ABL_1	**-kabu*
ABL_2	**-junu*
DAT	**-ji*
COM	**-ngany*
PER	**-marru*

The locative postposition shows lenition or loss of the initial velar stop in many environments in the modern languages, which may or may not have occurred in pNN. The fact that the Nyulnyulic languages consistently show the stop in final position in their metathesised forms suggests that the weakening might be more recent. In Nyikina, Warrwa, and the inland dialect of Yawuru the vowel has lowered from *u* to *a*.

The allative postposition appears in two rather different forms, *-ung ~ -ing* in Nyulnyulic languages, and *-ngana ~ -ngan* elsewhere. One possibility is that the forms are reflexes of a single pNN form, presumably **-ngana*, the Nyulnyulic form showing loss of final syllable and metathesis of the remaining CV, as for various other postpositions. This leaves the quality of the initial vowel exceptional, though not inexplicable (for instance, it may be motivated by functional pressure to keep the allative and instrumental distinct). Alternatively, they may be reflexes of two distinct postpositions, **-ngana*, presumably an allative, and **-ung* which may have been some sort of oblique or purposive marker.[15] It is difficult to decide between these two possibilities, though the second could account for the range of senses of the modern forms in WNN, presuming that the allative was lost in Nyulnyulic, its functions taken over by the oblique, the oblique in Bardic, its functions taken over by the allative.

All reasonably well-documented NN languages show two distinct ablatives, here labelled ABL_1 and ABL_2. These contrast semantically: ABL_1 always has the more local meaning, indicating the immediate source or origin from which an event or thing moves, while ABL_2 has a less local meaning, and indicates a source that characterises the event or entity, without implying motion (real or figurative). As this suggests, the ABL_2 shows derivational uses that the ABL_1 does not; however, the former does not seem to have reduced to a derivational affix in any language.

The WNN causal postposition (which marks prior causes, reasons, or connections) and ENN dative are clearly cognates, and we tentatively take them to be reflexes of a pNN dative. Its form, **-ji*, is, of course, unusual for an Australian language — most have a form resembling *-wu* or *-ku*; Gooniyandi, however, shows the perhaps cognate *-yoo ~ -joo*.

All modern NN languages have distinct instrumental and comitative postpositions. There is reason, however, to believe that pNN had a single postposition, **-ngany*, that covered both functions. The other instrumental and comitative markers shown in Table 7 are perhaps more recent borrowings. Evidence for this is too complicated to go into here, but is discussed more fully in McGregor (1997). I know of no plausible cognates for **-ngany* in other non-Pama-Nyungan languages.

All WNN languages, as well as Warrwa and perhaps Jukun, have a system of pronominal prefixes that attach to a small set of nominals referring primarily to inseparable body parts and a few other items closely associated with the 'personal sphere' (such as 'name', 'reflection', 'self', and so on) — see McGregor (1995) and McGregor (1999).[16] The fact that cognates in the languages without systems of pronominal prefixes invariably show the

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15 We are grateful to Nick Evans (pers. comm.) for pointing this possibility out to us, and drawing our attention to the similar oblique markers in distant Northern Territory languages — including oblique marker *-ung* for pronouns in Iwaidja and Maung.

16 There is some evidence that the set of prefix-taking nominals may have been somewhat larger in pNN, and also included certain nominals denoting inherent or defining properties. Thus, we find words for 'long', 'many', and various others with an initial *ni*, which might well be a relic of the third person minimal prefix.

erstwhile third person minimal prefix strongly suggests that the system can be traced back to pNN. These prefixes indicate the person to which the part or representation 'belongs', and show an Assiniboine type person-number system (see §3.3 above). Table 9 shows the reconstructed system. Similarities to the corresponding cardinal pronouns are manifest, though the second and third person minimals differ somewhat.

Table 9: Proto Nyulnyulan pronominal prefixes to nouns

	minimal	augmented
1	**nga-*	**yarr-*
1+2	**ya-*	
2	**nyi-*	**kurr-*
3	**ni-*	**yirr-*

3.5 Proto Nyulnyulan verbal morphology

All modern NN languages — like most other languages of the northwest of the continent (McGregor 2002) — show two very different types of verbal construction: simple and compound verb constructions. The former consist of a morphologically complex INFLECTING VERB that takes a number of inflectional prefixes (pronominal, tense, and mood) and suffixes (tense and/or aspect), as well as a few derivational affixes (notably the reflexive/reciprocal prefix and suffix) and enclitics (e.g. cross-referencing pronominals, and relators of various types). Inflecting verbs lend themselves well to item-arrangement description — see Metcalfe (1975:4) for Bardi; Stokes (1982:237, 293) for Nyikina; Hosokawa (1991:114) for Yawuru; McGregor (1994:38) for Warrwa; and McGregor (1996:38) for Nyulnyul. The template in Figure 3, which shows the structure of the inflecting verb in Yawuru, is fairly representative.

NN languages have quite large sets of inflecting verbs for north-western languages — a minimum of sixty or so in ENN to over two hundred in WNN.

Compound verb constructions consist of an inflecting verb together with a non-inflecting PREVERB, which normally precedes the inflecting verb. The preverbs are open classes having several hundred members. In all NN languages about a score of inflecting verbs have the potential of occurring in compound verb constructions, the majority of these being high frequency and semantically basic verbs.

There is reason to believe that the compound verb construction is a fairly recent innovation that has been widely diffused across northern Australia (McGregor 2002: Chapter 8). How recent is impossible to say, though it cannot be traced back to a putative proto-language for all of the languages, e.g. to Proto non-Pama-Nyungan. This raises the question: was the compound verb construction present in pNN, or is it a more recent innovation that has diffused through the languages? There can be little doubt that some ancestral language did not have the construction, and had only the simple verb construction — but was this pNN or pre-pNN?

–7	(–6)	–5	(–4)	(–3)	(–2)	(–1)	**Stem**	(+1)	(+2)	(+3)	(+4)	(+5)	(+6)
subject pronoun	(nasal)	tense/mood	(number)	(conjugation marker)	(reflexive-reciprocal)	(nasal)	stem	(reflexive-reciprocal)	(aspect)	(applicative)	(dative-imperative/subordinator)	(object/oblique pronoun)	(vocative)

Figure 3: Template structure of the inflecting verb in Yawuru

The fact that we have been able to reconstruct preverbs for pNN might seem to suggest in favour of the construction's presence in the proto-language. So also might the high degree of consistency between the languages in terms of both the sets of inflecting verbs that occur in compound verb constructions, and the numbers of different preverbs each collocates with. However, neither characteristic is telling. Reconstruction of lexical items filling certain roles in modern languages does not imply existence of the grammatical role in the proto-language. Some of the modern preverbs are quite likely reflexes of pNN nominals and ideophones. The second characteristic could well be a result of similar statistical patterns in the distribution of verbal lexemes, and borrowing. The fact that the system is more entrenched and grammaticalised in ENN is a point in favour of the diffusion of the construction, probably from the east and north-east. If so, extensive borrowing of preverb lexemes may have occurred subsequent to the separation of pNN. Given present evidence I can see no way of deciding between the two historical scenarios, and the arguments for each are explicable in the alternative scenario.

In any event, it seems clear that inflecting verbs represent older lexical material than preverbs, and they are the obvious things to investigate in a comparative investigation — they are most likely to provide us with good evidence for subgrouping. However, they also present numerous problems, not the least of which result from the different analytical decisions by the linguists who have worked on the various languages. It is beyond the scope of the present paper to delve into pNN inflecting verb morphology (an investigation is planned for the near future). For our purposes it is sufficient to mention a few characteristic features of NN inflecting verb morphology that perhaps represent shared aberrations that argue for the genetic unity of the family, and its distinctiveness from other Australian families.

First, many modern NN languages have an infinitival inflecting verb form involving the prefix *ma-* replacing the nominative pronominal prefix. For instance, in Nyulnyul we have *ma-jal-in* (INF-see-IMP) 'seeing' and *ma-lurr-in* (INF-burn-IMP) — cf. e.g *nga-ni-ny-jal-ø* (1minNOM-TR-EN-see-3minACC) 'I saw him/her/it', *i-ni-ny-jal-ø* (3minNOM-TR-EN-see-3minACC) 'he/she/it saw him/her/it', etc. Infinitival forms are attested in Bardi, Nyulnyul, Nyikina, Warrwa, and, according to Nekes Worms (1953), Jabirrjabirr, Nimanburru, Jukun, and Yawuru.[17] It is therefore reasonable to reconstruct the infinitival prefix **ma-* for pNN. This seems to be a peculiarity of NN.

17 Stokes (1982:13) also reports this verb form. However, according to Hosokawa (1991:193) it is never used in natural speech by native speakers of Yawuru, although those who are fluent speakers of Nyikina often accept the *ma-* infinitival forms.

Second, every language shows a second person minimal pronominal prefix *mi-*, normally in the non-future; in Nyikina it is restricted to the transitive conjugation class, while in Nyulnyul it is also found in the future of the intransitive conjugation. It is reasonable to reconstruct **mi-* as one allomorph of the second person minimal nominative pronominal prefix in pNN. This also seems to be a NN aberration — I am not aware of any other Australian languages that show this prefix form in the second person minimal/singular. (See, however, §6 below.)

Third, reflexive/reciprocal forms of inflecting verbs in NN languages are consistently formed by the prefix *ma-* plus suffix *-nyji* (there are a number of qualifications and allomorphic variations that need not concern us here — see McGregor 2000b for details). This construction can doubtless be traced back to pNN. Although the suffix is widespread in northern Australia as a marker of reflexive/reciprocal (see Evans (1995:37) and Alpher, Evans & Harvey this volume), the prefix seems to be peculiarly NN.

Fourth, it seems that all modern NN languages show two primary conjugation classes, *na* and ø. These are distinguished by different prefix- rather than suffix-inflections, as is usually the case in Australian languages; conjugation prefixes *na-* ~ *a-* and ø- are apparent in many of the paradigmatic alternants. The *na* class is predominantly transitive, the ø class predominantly intransitive. (Some languages (e.g. Yawuru) show subclasses.) It is tempting to trace the conjugation classes back to pNN. However, some caution is required: the former marker most likely derives from a third person minimal accusative prefix (McGregor 2002: §5.2.1). Apparently at some stage in the history of NN there were systems of nominative and accusative pronominal prefixes; the latter were lost, and the third person minimal adopted throughout the paradigm of transitive inflecting verbs. This is not a particularly remarkable development, and it could well have occurred independently more than once subsequent to the differentiation of pNN. Nor is it implausible that it might have diffused, as could have the encliticisation of accusative pronominals (which are almost identical in form to the free cardinals) — indeed, the two could have gone hand in hand, reinforcing one another.

Finally, two inflecting verb root suppletions are characteristic of NN languages, and doubtless go back to pNN. They are the suppletive roots -DI and -JI ~ -JU ~-J of the 'say, do' inflecting verb, and -NGA and -NI ~ -N of 'be, sit'; the first form in both cases is found in the past tense and minimal numbers in most NN languages.

4 The two primary groups

In this section we present some comparative evidence in favour of the primary division of the NN languages. This evidence is almost entirely lexical. To make a convincing case, reconstruction of their distinctive morphologies would be desirable. This, however, is beyond the scope of the present paper, and we make just a few preliminary observations in §4.2. But first let us look at the lexical evidence.

4.1 Lexical differences and innovations

It is possible to identify a number of lexical items peculiar to ENN and WNN languages — which would thus be candidate reflexes of proto-lexemes distinctive of one or the other (putative) proto-language. So far, it has been possible to reconstruct about one hundred

plausible pWNN peculiarities, and about fifty pENN. These are listed in Appendices 2 and 3 respectively. Only when cognates were found exclusively in one group was a form attributed to its proto-language. Of course, it is quite likely that in some cases lexemes were borrowed from a language belonging to one group into an adjacent language from another. For practical reasons such lexemes were excluded from the reconstructed proto-lexicons, except when the adjacent language was Ngumbarl; also excluded were reconstructions restricted either to subgroups within a group, or to adjacent languages, both of which are quite numerous. Careful investigation is required to determine whether or not such items are retentions from pWNN or pENN.

Of course, it is improbable that each reconstructed proto-form represents an innovation of the proto-language; some doubtless go back to pNN itself, reflexes having simply been lost in one modern group. Others could well have been diffused across regions that accidentally coincide with groups. Some, however, are surely innovations of the two lower-level proto-languages. We now attempt to identify some of these.

It is possible to set up a number of contrasting Proto Western and Proto Eastern forms with the same apparent meanings. These include the following twenty items:

Table 10: Contrasting Proto Western and Proto Eastern Nyulnyulan synonyms

	pWN	pEN
'rotten'	**biini*	**mandu*
'leaf'	**bilibil*	**wirrkiny*
'bush country'	**bindan*	**birra*
'kangaroo'	**burruk*	**barrjaniny*
'tree, stick'	**bardangk*	**baalu*
'arrive, come'	**darr*	*-BULA
'yes'	**iyi*	**ngawayi*
'later, soon'	**karrm*	**wanyji*
'egg'	**lakurr*	**kambiy*
'good'	**layib*	**maabu*
'nose'	**-mal*	**nguni*
'seek'	*-MI	*-MURUNGU
'knowledgeable'	**-mungk*	**nila*
'small'	**murrul*	**wuba*
'mud'	**ngijil*	**jabula ~ *jakula*
'sister'	**marrir*	**ngunu*
'forehead'	**-nkarra*	**jirrbal*
'thigh'	**-nmurr*	**balngany*
'tail'	**-warla*	**makarra*
'woman'	**wurany*	**jarndu*

In most cases there is either no phonologically similar lexeme in a nearby non-Nyulnyulan language (e.g. for 'nose' and 'later'), or if there is, it is restricted to just the nearby languages, and is not found in close relatives of that language (e.g. for pENN 'woman', 'knowledgeable', and 'rotten'). Of course, it is possible that one or the other of the pairs is a

reflex of the pNN form; in fact, it is possible that both are reflexes of pNN lexemes, and that at least one reflex has undergone distinctive semantic or grammatical changes in the process of splitting of the two groups from pNN. This will normally leave one at least lexical item as an innovation — perhaps of form, perhaps in meaning, and/or perhaps in grammatical properties. The question is which item is innovated?

These are difficult questions to provide definitive answers to. In some cases it is possible to make an informed guess. We have reconstructed a system of bound pronominal prefixes to certain nominals in pNN, this system being more extensive than in any modern language. This suggests that the pENN terms for 'nose', 'forehead', 'thigh', and 'tail' are innovations, while the corresponding prefixing nominals of pWNN might well be retentions from pNN.[18] Quite likely pENN **nila* 'knowledgeable' is also an innovation — it is evidently a clipping of the third person minimal form of the pNN **-lababa* 'ear'. Such a meaning extension is of course natural in Australian languages (Evans & Wilkins 2000). But if it went back as far as pNN we would have to assume that it was lost in pWNN, which innovated the prefixing form **-mungk* 'knowledgeable'.[19]

Likewise, the preverb **darr* 'arrive, emerge' is a probable innovation of pWNN, granted the account of the historical development of the compound verb construction adumbrated in §3.5 above. Similar reasoning — plus the reconstructed pNN forms — leads us to identify **kabu* 'eat' and **wangkurr* 'cry' as probable pENN innovations.

Knowledge of the pNN form can sometimes permit identification of innovations: **marlu* is almost certainly a pENN innovation, that replaced the earlier pNN **yarri* 'no, not, without', leaving only a relic of the earlier form in one of the Yawuru forms for 'without', and possibly Nyikina and Warrwa preverbs *yarri(j)* 'disappear'. Unfortunately, most cases are less clear-cut than this, and it is usually impossible to rule out the possibility that a term restricted to the languages of one group is a reflex of a pNN form. For instance consider the pWNN inflecting verb *-MURRAR 'smell', reflexes of which exist alongside of reflexes of pNN *-BANYJU 'smell'. The former could just as well have been lost to the ENN languages as their fund of inflecting verbs dwindled. Only by a somewhat dubious application of Occam's razor can we conclude *-MURRAR 'smell' was a pWNN innovation.

Semantic considerations also permit us to make informed guesses. *-JIMB 'die' is a probable innovation, a semantic extension of pNN **jimbi* 'down, below, inside'; the fact that reflexes are restricted to WNN suggests that the innovation occurred after the split between pWNN and pENN.

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18 In line with remarks of the previous paragraph we cannot presume that the forms with these meanings in ENN are innovations. It is not impossible that they are reflexes of pNN terms for other, presumably nearby and less inalienable, body parts that replaced the original prefix-taking terms. The same qualification applies to all the 'informed guesses' below; I gloss over it in the interests of making the strongest guesses consistent with known facts. The tentative nature of the guesses should not be forgotten, and 'innovation' should be interpreted as innovation in the correspondence of phonological form, meaning, and part-of-speech — not exclusively the first. Innovation of all the three types could potentially be taken as evidence of subgrouping, though innovation of form is the most convincing.

19 This case is not, of course, entirely convincing — an alternative (only slightly more complex) possibility would be that **-mungk* 'knowledgeable' was an innovation of pWNN that replaced a pNN prefixing root **-la* 'knowledgeable'. Nick Evans (pers. comm.) has pointed out to me that Kayardild has the related form *mungurru* 'know, knowledgeable', which is consistent with the hypothesis that **-mungk* 'knowledgeable' is the older form.

We now turn briefly to closed class grammatical words, which provide us with some support for subgrouping. Assuming the correctness of the reconstruction of the first person augmented cardinal pronoun **yarr* in pNN, it is possible that the augment found in modern WNN languages can be traced back to an innovation in pWNN. This leaves aside the problem of the different vowels of the augment: *-ad* in Nyulnyulic, *-o(o)doo* in Bardic. We cannot rule out analogical innovation in one of the subgroups, but a perhaps more likely alternative is that pWNN innovated the augment **-adu*, and that subsequently the final vowel was lost in Proto Nyulnyulic, and vowel harmony occurred in Proto Bardic.

A few other minor irregularities in closed class words in WNN languages suggest innovations in pWNN. One is the term for 'east', which involves the augment *-warr* in Nyulnyulic, *-(a)rr* in Bardic, but which is absent in ENN languages. It is plausible to reconstruct the pWNN form with augment **-warr*, representing an innovation in that language. Another is the term for 'when, today', which involves what looks like the temporal postposition attached to the pNN form **bana* 'when, today' — thus, *banangkarr* 'when, today' in Nyulnyulic, *baniigarr* 'when' in Bardic. A third irregularity is exemplified by the interrogative 'who, what' and negative 'no, not', reflexes of which have lost their initial glide in all WNN languages, not only those that show this as regular process (see §5.2 below). Of course, neither borrowing nor parallel development can be ruled out in any of these cases; the simplest assumption would seem, however, to be that the unexpected forms in the modern WNN languages are unexpected because of innovations or irregularities jointly inherited from pWNN.

4.2 Morphological peculiarities

It is difficult to identify shared morphological peculiarities or irregularities in either group of languages that can be convincingly traced back to innovations of the proto-languages. Almost all cases of irregularities so far identified are more plausibly traced back to pNN, the irregularities having been lost in some of the modern languages — which just happen to coincide with the groups. The *wa- ~ wi-* allomorph of the third person irrealis (usually also future) pronominal prefix to inflecting verbs that occurs in first position in the IV, and is characteristic of ENN, is more likely a reflex of a pNN irrealis pronominal prefix than an innovation of pENN. The WNN languages simply lost this prefix, extending either the future or non-future prefix (depending on subgroup) to the irrealis.[20] Likewise for the *ya-* allomorphs of the irrealis mood prefix, that are exclusive to ENN.

In many cases morphological innovations are of the types that lend themselves well to diffusion. Thus, the general subordinate clause marker *-jarri ~ -yarri* of ENN is a readily segmented (and presumably psychologically prominent) morpheme occurring in the penultimate order-class of the inflecting verb, and (one would think) highly borrowable. So also is the ENN comitative/instrumental postposition *-barri* (see §3.4 above). These do not represent clear cases of ENN innovations.

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20 The mismatch between the paradigms for Bardic and Nyulnyulic is the main reason for hypothesising *wi- ~ wa-* as pNN. A similar loss of a form and consequent paradigm restructuring could have happened with the three postpositions **-ngana* ALL, **-ung* OBL, and **-ji* DAT, again providing no convincing evidence of subgrouping.

Most plausible morphological innovations can be traced back to the proto-languages at subgroup rather than group level. One that might be traced back to the proto-language of a group, pENN, is the system of possessive pronominal suffixes attached to (some) inalienably possessed nominals, including e.g. Warrwa *ngunii-* 'nose', *kurndi-* 'shoulder', and *balnganyi-* 'thigh'. Unlike the possessive prefixes (see §3.4 above), the possessive suffixes are almost everywhere formally identical to the free oblique pronominals. Only in Big Nyikina and Warrwa is the system viable, and the full paradigm of person and number combinations found. In Small Nyikina and Yawuru only the form corresponding to the third person minimal possessor is found, and then for only a relatively small number of nominals, and usually without the *j* > *y* lenition characteristic of Big Nyikina and Warrwa. Yet there are facts that seem to suggest that the Yawuru forms were not simply borrowed. For instance, *marlu-jina* ~ *marlu-yina* (not-3min) 'without' has no absolutely certain source in either Nyikina or Warrwa, where the closest corresponding term *mali(i)na* 'without' involves a plain apical lateral, and may have a different etymology — the base form is not the negative particle *marlu* 'no, not'.

We cannot be certain, however, that it was the system of possessive pronominal suffixes that was innovated in pENN, rather than just a single suffix, the third person minimal *-jina*, which could have served either as a general marker of possession or just as an isolated third person possessor marker — systems (almost) as attenuated do exist in nearby languages, including Gooniyandi (McGregor 1998b) and Miriwoong (Kofod 1978:144). The system in Big Nyikina and Warrwa could well have arisen by reanalysis of *-jina* as a bound pronominal.

5 Nyulnyulan historical phonology

In this section we outline some of the major historical phonological processes that seem to have occurred in the development of NN languages, given the sound correspondences in the modern languages. All of the processes we discuss involve consonants; vowel alternations present a more complex and (on the face of it) less regular situation, and are left for another occasion. Admittedly, there remain a number consonant correspondences that have yet to be accounted for, as well as conditioning factors that require more precise specification. In a number of cases it is obvious that irregularities result from borrowings of back into the language of old lexical material, subsequent to the period of application of the phonological rule.

5.1 Loss of final vowels

Three WNN languages, namely Nyulnyul, Jabirrjabirr, and Nimanburru, show loss of root final vowels, as illustrated in the examples under Table 11. The fact that the loss is widespread, and very few final vowels are found in the corpora for Nyulnyul, Jabirrjabirr, and Nimanburru, suggests this is a relatively recent process.

Table 11: Loss of final vowels in Nyulnyul, Jabirrjabirr, and Nimanburru

	proto-form		Nyulnyul	Jabirrjabirr	Nimanburru
'back'	**-ka*	(pNN)	*-k*	*-k*	*-k*
'black'	** maanka*	(pNN)	*maank*	*mank*	*mank*
'alive'	** nunyji*	(pNN)	*ninyj*	*nunyj*	*ninyj*
'shin, knee'	**-midi*	(pNN)	*-mid*	*-mid*	*-mid*
'tread, trample'	*-JANYBU	(pNN)	-JANYB	-JANYB	-JANYB
'place, country'	** buru*	(pNN)	*bur*	*bur*	*bur*

In Nyulnyul at least an anaptyctic vowel with an indeterminate schwa-like quality may appear at the juncture between one word and a following consonant-initial postposition, enclitic, or word.

Of course, this historical process is fairly common, and is not a reliable indicator of subgrouping. Indeed, we find in nearby Mainland Bardi what appears to be the beginning of a similar process of truncation, which has barely begun in either Island Bardi or Jawi:

> One of the significant linguistic distinctions between the two groups [i.e. Mainlanders and Islanders — WM & BS] concerns final vowels. A characteristic of Badi speech is the de-voicing of final vowels but this is less pronounced with the Island group. Nekes Worms (1953), who concentrated on the 'Mainland' group at Lombadina, recognise comparatively few final vowels. (Metcalfe 1975:2)

Areal influence from Nyulnyul presumably accounts for the presence of this phonological process in Mainland Bardi.

5.2 Loss of initial glides

Loss of initial consonants is also a not uncommon historical process, and has occurred in various geographically disparate languages on the Australian continent (e.g. northern Cape York languages and some Arandic languages of Central Australia). In the NN family it is restricted to word-initial glides *y* and *w* in Bardi and Jawi; initial glides of prefixing roots are not affected by this process. Some examples are:

Table 12: Loss of initial *y* in Bardi and Jawi

	proto-form		Bardi	Jawi
'together'	**yambun*	(pWNN)	*amboon*	*ambun*
'mother-in-law'	**yalirr*	(pWNN)	*aloorr*	*ala(rr??)*
'dog'	**yila*	(pNN)	*iila*	*ila*
'sickness'	**yiika*	(pNN)	*iiga*	*ika*

Table 13: Loss of initial *w* in Bardi and Jawi

	proto-form		Bardi	Jawi
'man'	**wamba*	(pNN)	*amba*	*amba*
'meat, fish'	**warli*	(pNN)	*aarli*	*arli*
'emu'	**winini*	(pNN)	*iniini*	*inini*
'rib'	**wiirri*	(pNN)	*iirri*	*irri*
'woman'	**wurany*	(pWNN)	*oorany*	*urany*

Since there are a fair number of words in the modern languages with initial glides *y* and *w*, it would seem that (assuming sound changes to be exceptionless) this process occurred and went out of use some time ago, quite probably at an earlier time than the loss of final vowels discussed in §5.1. Words with initial *y* and *w* could thus be presumed to be more recent borrowings. These include, for instance Bardi *wara* 'rag', *wiirri* 'rib of human being' (the regular *iirri* refers specifically to the ribs of dugongs), and Bardi and Jawi *yardab* 'crawl'.[21]

5.3 Lenition

Peripheral and palatal stops lenite to the corresponding glides in certain environments in Bardi and Jawi. The following are illustrative examples:

Table 14: Lenition of *j*

	proto-form		Bardi	Jawi
'sharp'	**karrji*	(pWNN)	*karrya*	
'two'	**kujarra*	(pNN)	*guyarr*	*kuyarr*
'sit'	**mijala*	(pNN)	*miyala*	*miyala*
'mud'[22]	**ngijil*	(pWNN)	*ngiil*	*ngiil*

Table 15: Lenition of *b*

	proto-form		Bardi	Jawi
'child'	**baaba*	(pNN)	*baawa*	*bawa*
'boomerang'	**jiiba*	(pNN)	*jiiwa*	*jiwa*
'liver'	**kabir*	(pNN)	*gawir*	*kawir*
'long'	**ni-birndi*	(pWNN)	*niwarndi*	*niwarndi*

21 The fact that *yardab* 'crawl' occurs throughout Nyulnyulan illustrates the observation that borrowings can reach throughout the family, and presence of similar forms across the languages is no guarantee of cognation.

22 The glide has either been lost between the two identical high vowels, giving rise to a long vowel, or the sequence *iyi* is not distinguishable from the long high vowel.

Table 16: Lenition of *k*

	proto-form		Bardi	Jawi
'dream'	**bukarri*		*boowarra*	-BUWARR
'hair of head'	**mukarn*	(pWNN)	*moowarn*	*muwarn*

The lenition of the palatal stop seems to be quite general, and is attested intervocalically, and following liquids. Lenition of the peripherals is more restricted, and does not occur following liquids — as shown by the Bardi examples: *lalga* 'dry' (<pNN **lalka* 'dry'), *kurrbal* 'throat' (<pWNN **kurrbal*).

In one environment *k* lenites to the palatal glide *y* rather than to the peripheral glide: this is following the high front vowel *i*:

Table 17: Lenition of *k* to *y*

	proto-form		Bardi	Jawi
'his/her/its back'	**ni-ka*	(pNN)	*ni-ya*	*ni-ya*
'his/her/its body'	**ni-karda*	(pWNN)	*ni-yarda*	*ni-yarda*
'eagle'	**warrikana*	(pWNN)	*arriyana*	*arriyan?*

Notice that in the first two examples lenition occurs across a morpheme boundary — and the corresponding forms following other phonological segments involve initial *k*; the third example indicates, however, that this is not merely a morphophonemic process.

Lenition is also found in ENN languages, though it seems to be virtually restricted to Warrwa, where we find a number of cases of **b* > *w* intervocalically, as shown by the examples in Table 18. The palatal stop does not lenite, and there are just a couple of examples of lenition of *k*, as in Nyikina and Warrwa *wirrwiny* 'leaf', from pENN **wirrkiny*.

Table 18: Lenition of intervocalic *b* in Warrwa

	proto-form		Warrwa
'liver'	**kabir*	(pNN)	*kawir*
'child'	**baaba*	(pNN)	*baawa*
'good'	**maabu*	(pENN)	*maawu*
'think'[23]	*-BARRIBARRI	(pNN)	-WARRIWARRI

Occasionally Warrwa *b* corresponds to **b*, as in *babala* 'brother' and *kulibil* 'saltwater turtle'. Presumably these were recently borrowed back into Warrwa, the genuine cognates having gone out of use. As in WNN, lenition does not normally occur following liquids, although there are occasional exceptions, including *jirrwal* 'forehead', from pENN **jirrbal* (cf. *kalbu* 'up, above', *karrbina*, and *malbulu* 'coolamon', which preserve the pNN stop).

[23] The initial segment of Warrwa -WARRIWARRI 'think' usually appears as /w/ since it almost always follows either a vowel- or liquid- final prefix. (Just occasionally an epenthetic nasal prevents this lenition.)

5.4 Contraction

The mid back vowel *o* of Bardi and Jawi arises, as mentioned previously, as a result of contraction of a VCV sequence where the first vowel is low, and the intervening consonant a peripheral stop or glide. Examples include:

Table 19: Contractions involving medial *b*

	proto-form		Bardi	Jawi
'brother'	**babal*	(pNN)	*borla*	*bola*
'from' (ABL postposition)	**-kabu*	(pNN)	*-go*	
'kangaroo species'	**karrabulu*	(pNN)	*garrol*	
'father's mother'	**kabali*	(pNN)	*goli*	

Table 20: Contractions involving medial *k* or *w*

	proto-form		Bardi	Jawi
'path, road'	**makirr*	(pNN)	*morr*	*morr*
'wattle type (spears)'	**yirrakulu*		*irrol(a)*	*irrol*
'club'	**nawurla*	(pNN)	*nola*	*nola*

We saw in the previous section that peripheral stops in Bardi and Jawi lenite intervocalically. This suggests that the process of contraction discussed in the present section came about in two stages: first the lenition of the stops, then contraction in more restricted environments. Thus we suggest the following two ordered rules for Bardic:

(1) $\begin{bmatrix} +\text{stop} \\ +\text{peripheral} \end{bmatrix} > \begin{bmatrix} \text{glide} \\ +\text{peripheral} \end{bmatrix} / \text{V} \_\_ \text{V}$ Lenition

(2) $\begin{bmatrix} +\text{vocalic} \\ +\text{low} \\ -\text{long} \end{bmatrix} \begin{bmatrix} \text{glide} \\ +\text{peripheral} \end{bmatrix} \text{V} > o$ Contraction

The restriction in (2) to the short low vowel is based on the fact that pNN **baaba* 'child' shows up as *baawa*, not *bo*. Rule (1) also requires a condition, namely that it does not apply to the velar stop when the preceding vowel is *i*.[24] As usual, exceptional forms can be found, including Bardi *gawir* and Jawi *kabir* 'liver', which appear not to involve a long vowel; these suggest a later borrowing of the pNN term back into the languages after its loss.

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24 In fact, there is more to the story than this, namely the existence of correspondences between the Bardic palatal glide (and sometimes stop) and the Nyulnyulic peripheral glide — e.g. *-yala* ↔ *-wal* 'tail', *-yorda* > *-jorda* ↔ *-ward* 'chin'. Further investigation is demanded.

5.5 A few minor and irregular processes

To conclude this section we mention a few phonological processes attested in a small number of words, and that appear to be sporadic. These are in need of further careful investigation.

A small number of correspondences can be set up between stops in Bardic and homorganic nasal–stop clusters in other languages; these appear to be restricted to peripherals. The balance of evidence indicates that the process involved is loss of the nasal segment in Bardic. The following are some illustrative examples:

Table 21: Loss of *m* in Bardi and Jawi

	proto-form		Bardi	Jawi
'bird'	**karrambal*	(pWNN)	*garrabal*	*karrabal*
'die'	*-JIMB	(pWNN)	-JIIBI	-JIBI

Table 22: Loss of *ng* in Bardi and Jawi

	proto-form		Bardi	Jawi
'tree'	**bardangk*	(pWNN)	*bardag*	*bardak*
'when'	**banangkarr*	(pWNN)	*baanigarr*	*banakarra*
'break'	*-JANGKULU	(pNN)	-JOOGOOLOO	-JUKUL
'know'	*-LANGKA	(pNN)	-LAGA	

Many other correspondences involve nasal–stop clusters in Bardic and other NN languages — e.g. Bardi and Jawi *jimbin* 'down' (<pNN **jimbin* 'down'), Bardi *jarrangg* 'tooth' (<pNN **jarringk* 'tooth'), and Bardi and Jawi *angga* 'what' (<pNN **yangka* 'who, what'). Unfortunately, however, examples are too few to permit specification of conditions under which the loss occurred. Also in Bardi and Jawi we find loss of final *k* at least in the one reconstructed pWNN nominal with this segment: *boorroo* 'kangaroo', from **burruk*. (Other instances of final *k* are in inflecting verbs, where they seem to be preserved, presumably thanks to the following suffixes.)

A number of correspondences involving WNN and ENN liquids and glides are not yet understood, primarily because they are so poorly attested. These seem to occur in the final syllables of words, or final position in closed syllables. Below are some examples (where no language is specified, the corresponding terms are attested in most relevant languages):

(3)	*l*	↔	*rr*	
	WNN		ENN	
	lakal		*lakarr*	'climb'
	gumbil (Bardi, Jawi)		*kumbarri*	'yellow (ochre)'
(4)	*r*	↔	*rr*	
	WNN		ENN	
	kabur		*kaburra*	'guts, liver'
	dumbar		*dumbarr* (Yawuru) ~ *doomarr* (Nyikina)	'fly'

(5)	*rr*	↔	*rr*	
	WNN		ENN	
	kururr		*kururr*	'blood'
(6)	*rr*	↔	*rl*	
	WNN		ENN	
	barrkarra		*barlkarra* (Yawuru)	'turkey'

In consonant clusters in initial position, glides and liquids correspond exactly, as in (6).

Finally, Warrwa shows a small number of examples of sporadic loss of *k* and *b* following liquids. Examples include -JALU 'fall' from pNN *-JALKU 'fall', and *durlu* 'heart' from pENN **durlbu*. And in Nyikina a few inflecting verbs lose their initial stop when following a vowel final prefix; this is the case for the high frequency inflecting verbs -A 'carry' (<pNN *-KA) and -I 'say, do' (<pNN *-JI ~ *-JU). Nyikina -ALKA 'beat, hit' is a possible cognate of Yawuru -BILKA, and could involve loss of the initial stop, with vowel harmony. (Warrwa -NKA may also be cognate.)

6 Summary and conclusions

In this paper we have discussed the classification of the Nyulnyulan languages of the Dampier Land peninsula and the western Kimberley. We have argued that they do indeed constitute a genetic family-like unit, differing markedly from nearby languages and language families in lexicon and morphology. We have also proposed a subgrouping hypothesis: the languages fall into two primary groups, Eastern Nyulnyulan and Western Nyulnyulan, which in turn each divide into two subgroups.

The case was argued by two very different methods, lexicostatistics and the comparative method; these provide independent support for the classification and subclassification. It was possible to reconstruct a couple of hundred potential pNN lexemes, as well as pronouns, pronominal prefixes, and postpositions; various historical phonological processes were proposed that account for the bulk of reflexes in the modern languages. The case for the primary groups ENN and WNN by the comparative method was rather less convincing. It proved extremely difficult to identify shared aberrations that could be convincingly traced back to innovations of either pENN or pWNN; in almost every case an alternative equally or more likely scenario could be mooted. Whilst no single aberration furnished decisive evidence taken in isolation, put together, the aberrations would seem to render the case for binary groups more likely. Limitations of space prevented detailed discussion of the four subgroups, though it is fairly obvious that the comparative evidence for them is far more convincing than the evidence for the primary groups.

One difficulty that confronted us at every point was the problem of distinguishing loans from inherited genetic material. Methods do exist, including determining whether the item in question has undergone expected phonological processes, and whether it satisfies the reconstructed grammar of the proto-language. In the end I am doubtful whether these methods will succeed in more than a minority of cases: there is reason to believe that a genuine inherited lexeme in one language can be replaced by a borrowed cognate from another; similarly, an innovated or borrowed item in one language could be replaced by a borrowed genuine cognate from a neighbour. And considerations based on reconstructed grammar will at present work only in the case of bound nominals and inflecting verbs.

Finally, our claim of family-like status for the NN languages is not a claim that they are genetically unrelated to other languages of northern Australia, merely that an entirely compelling case has yet to be made that they are. There are a number of striking similarities in the pronominals of non-Pama-Nyungan languages, bound and free, that suggest a common origin (see also Harvey this volume). More intriguing are a number of morphological correlations with the Mindi languages — a discontinuous family embracing Jaminjungan in the Victoria River region and the Barkly Tablelands languages far to the east (Chadwick 1997). Two of these have been commented on already — the similarity in form of the ergative marker, and the third person singular pronominal (though this is not peculiar to the two families). More significant is the NN second person minimal inflecting verb prefix *mi-*, which is a not implausible cognate of the Mindi dual inclusive *-mirndi-* ~ *-mindi-* (cf. Chadwick 1997:100); in fact, Jaminjung shows *mi* in the second person singular absolutive pronoun *nami* (Schultze-Berndt 2000:64). Both ENN and Jaminjung exhibit a *ya-* irrealis prefix allomorph, although it precedes rather than follows the pronominal prefix in Jaminjung (Schultze-Berndt 2000:93). Although these are all monosyllabic segments, increasing the probability that the forms are accidental look-alikes, their number suggests that the possibility of a shared ancestor more immediate than Proto non-Pama-Nyungan is worth exploring.

Appendix 1: Reconstructed Proto Nyulnyulan lexemes

The following list of potential pNN lexemes indicates the reconstructed phonological form, together with suggested meaning. Where a group or language shows a related meaning, this is indicated in brackets.

1.	**a*	and	Jw, Bd, Nnl, JJ, Nm; Jk, Yw, Nyk, Ww
2.	**-alma*	head	Jw, Bd, Nnl, JJ, Nm; Ngb; Jk, Nyk, Ww
3.	**baaba*	child	Jw, Bd, Nnl, JJ, Nm; Ngb; Jk, Yw, Nyk, Ww
4.	**baarn*	scorpion	Bd, Nnl, JJ; Yw, Nyk, Ww
5.	**bab*	deaf (ENN 'forget')	Bd, Nnl, JJ, Nm; Yw, Nyk, Ww
6.	**babala*	brother (older) (B_+)	Bd, Nnl, JJ, Nm; Ngb; Jk, Yw, Ww
7.	**bakarl*	paperbark coolamon	Bd, Nnl, JJ, Nm; Ww
8.	**bana*	when	Bd, Nnl, JJ, Nm; Jk, Yw, Nyk, Ww
9.	**bandal*	feather (ENN 'bird')	Nnl, JJ, Nm; Jk, Yw, Ww?
10.	**baninyburu*	carpet snake	Bd, Nnl, JJ, Nm; Jk, Yw, Nyk, Ww
11.	*-BANYJU	smell	Nnl, JJ, Nm; Jk, Yw, Nyk, Ww
12.	**banyjud*	poison for stunning fish	Bd, Nnl, JJ, Nm; Yw, Ww
13.	**banu*	east	Jw, Bd, Nnl, JJ, Nm; Jk, Yw, Nyk, Ww
14.	*-BARDIKA	full up	Nnl, JJ, Nm; Yw, Nyk
15.	*-BARND	cover over, extinguish	Jw, Bd, Nnl, JJ, Nm; Yw, Ww
16.	**barni*	goanna	Bd, Nnl, JJ; Yw, Nyk, Ww
17.	*-BARNJ	exchange, reflexive/reciprocal IV	Bd, Nnl, JJ; Yw, Nyk, Ww
18.	*-BARRIBARRI	think	Nnl, JJ, Nm; Nyk, Ww
19.	**barrjaniny*	wallaby	Nnl, JJ, Nm; Jk, Yw, Nyk, Ww

20.	**barrkana*	cold season, winter	Jw, Bd, Nnl, JJ; Jk, Yw, Nyk
21.	**barrkar*	turkey, bustard	Jw, Bd, JJ, Nm; Yw
22.	**barulu*	catfish	Nnl; Jk, Yw, Nyk, Ww
23.	**baybirr*	behind	Jw, Bd, Nnl, JJ, Nm; Jk, Yw, Nyk, Ww
24.	**biika*	shade	Nnl, JJ, Nm; Yw
25.	**bilbil*	twinkle, twitch	Bd, Nnl, JJ, Nm; Yw, Nyk
26.	**bili*	aggressive, wild, angry, fight	Jw, Bd, Nnl, JJ, Nm; Jk, Yw, Nyk, Ww
27.	**bilyurr*	soul, spirit	Nnl, JJ, Nm; Yw, Nyk, Ww
28.	**bindabinda*	butterfly, moth	Nnl, JJ; Jk, Yw, Nyk
29.	**binyjabinyja*	long pearlshell pendant	Bd, Nnl, JJ; Yw, Nyk
30.	**binyjin*	bark coolamon	Nnl, JJ, Nm; Jk, Yw, Ww
31.	**birlarr*	spring	Bd, Nnl, JJ, Nm; Jk, Yw
32.	*-BU	hit, kill	Jw, Bd; Nyk
33.	**bubu*	flower	Nnl, JJ, Nm; Yw, Nyk
34.	**buda*	nape of neck	Jw, Bd, Nnl, Nm; Yw, Nyk, Ww
35.	**bukarri*	dream, dreamtime	Jw, Bd, Nnl, JJ, Nm; Jk, Yw, Nyk, Ww
36.	**bulngurru*	middle, in between, on the way	Jw, Bd, Nnl, JJ, Nm; Jk, Yw, Nyk, Ww
37.	**bulyji*	tired, exhausted	Jw, Bd, Nnl, JJ,Nm; Yw, Nyk
38.	*-BUNDARR(A)	bite	Jw, Bd, Nnl, Nm; Jk, Yw
39.	**burda*	shit, excrement	Nnl, JJ, Nm; Yw
40.	**burrb*	dance	Jw, Bd, Nnl, JJ; Jk, Yw, Nyk, Ww
41.	**burrurr*	string	Bd, Nnl, JJ, Nm; Jk, Ww
42.	**buru*	camp, place, country	Jw, Bd, Nnl, JJ, Nm; Jk, Yw, Nyk, Ww
43.	**buu*	blow	Jw, Bd, Nnl, JJ, Nm; Jk, Yw, Nyk, Ww
44.	**buya*	ant species	Jw, Bd, Nnl, JJ, Nm; Jk, Yw
45.	**da*	hammer	Bd, Nnl, JJ; Nyk
46.	**dakidaki*	deaf	Bd, Nnl, JJ, Nm; Jk, Yw
47.	**dangku*	chin, lower jaw	Jw, Bd, Nnl, JJ, Nm; Ngb; Yw, Nyk
48.	**dibirr*	turn	Nnl, JJ, Nm; Ww
49.	**dilba*	kidney	Jw, Bd, Nnl, JJ, Nm; Nyk
50.	**dumbarra*	fly	Nnl, JJ, Nm; Yw, Nyk, Ww?
51.	*-(I)BI	drink	Jw, Bd, Nnl?; Yw, Nyk
52.	*-JABALA	ask	Bd, Nnl, JJ, Nm; Yw, Nyk, Ww
53.	*-JALA	see	Jw, Bd, Nnl, JJ, Nm; Jk, Yw & Nyk ('look after'), Ww
54.	**jalinymarr*	pelican	Jw, Bd, Nnl, JJ, Nm; Jk, Yw, Nyk, Ww
55.	*-JALKU	fall	Jw, Bd, Nnl, JJ, Nm; Jk, Yw, Nyk, Ww
56.	**jalngka*	magic power, healing potential	Bd, Nnl, JJ, Nm; Jk, Yw, Nyk
57.	**jalngkangurru*	doctor ('medicine man')	Jw, Bd, Nnl, JJ, Nm; Jk, Yw, Nyk, Ww
58.	**jalwal*	cousin	Bd, Nnl, JJ, Nm; Yw, Nyk, Ww
59.	**jam*	mother's father (MF)	Bd, Nnl, JJ, Nm; Yw, Nyk, Ww
60.	**jamiyunu*	axe	Bd, Nnl, JJ, Nm; Yw, Nyk, Ww
61.	**jamunyarri*	wife's father (WF)	Jw, Bd, Nnl, JJ, Nm; Jk?, Yw, Ww

62.	**jana*	where	Jw, Bd; Ngb; Jk, Yw, Nyk, Ww
63.	*-JANBU	tread, step, trample	Bd, Nnl, JJ, Nm; Jk & Yw ('kick'), Nyk, Ww
64.	**jangkala*	calf	Jw, Bd, JJ, Nm; Ngb; Jk, Yw
65.	*-JANGKULU	break	Jw, Bd; Yw, Nyk, Ww
66.	**ja(r)l*	split	Nnl, JJ, Nm; Jk?, Yw, Nyk, Ww
67.	**jarndu*	harmonic generation	Bd, Nnl, JJ; Yw & Nyk ('countryman, relative')
68.	**jarrbard*	lift up, carry	Bd?, Nnl, JJ; Nyk, Ww
69.	**jarringk*	tooth	Jw, Bd, Nnl, JJ, Nm; Ngb; Jk
70.	*-JI ~ *-DI	say, do	Jw, Bd, Nnl, JJ, Nm; Jk, Yw, Nyk, Ww
71.	**jidlarra*	downwards	Bd, Nnl; Yw, Nyk, Ww
72.	**jiiba*	boomerang	Jw, Bd, Nnl, JJ, Nm; Nyk, Ww
73.	**jimbin*	down, below, inside	Jw, Bd, Nnl, JJ, Nm; Jk, Yw, Nyk, Ww
74.	**jinal*	spear type	Jw, Bd, Nnl, JJ, Nm; Jk, Yw, Nyk, Ww
75.	**jirirr*	shooting star	Bd, JJ; Nyk, Yw
76.	**jirrmu*	sing	Jw, Bd, Nnl; Yw
77.	**jiwarri*	corpse	Bd, Nnl, Nm; Jk, Yw
78.	*-JULNGA	tell	Bd, Nnl, JJ, Nm; Yw, Nyk, Ww
79.	**jungku*	fire	Nnl, JJ, Nm; Ngb; Jk, Yw, Nyk, Ww
80.	**juny*	suck	Bd, Nnl, JJ, Nm; Yw, Nyk
81.	**jurnk*	run	Jw, Bd, Nnl, JJ, Nm; Jk, Yw, Nyk?
82.	**jurr*	downwards	Nnl, JJ, Nm; Yw
83.	**jurru*	snake	Jw, Bd, Nnl, JJ, Nm; Jk, Yw, Nyk, Ww
84.	**jur(r)urr*	pour out	Bd, Nnl, JJ, Nm; Yw, Nyk
85.	*-KA	carry	Jw, Bd, Nnl, JJ, Nm; Jk, Yw, Nyk, Ww
86.	**kaanyji*	bone	Jw, Bd, Nnl, JJ, Nm; Jk, Yw, Nyk, Ww
87.	**kabali*	father's mother	Bd, Nnl, JJ, Nm; Jk, Yw, Ww
88.	**kabir*	liver (ENN, except Jk 'guts')	Jw, Bd, Nnl, JJ, Nm; Jk, Yw, Nyk, Ww
89.	**kajurd*	ashes (cold)	Jw, Bd, Nnl; Jk, Nyk, Ww
90.	*-KALBARR	lose, drop	Bd, Nnl, JJ, Nm; Yw, Nyk
91.	**kalbu*	up, above	Nnl, JJ, Nm; Jk, Yw, Nyk, Ww
92.	**kaliya*	already, finished	Bd, Nnl?; Yw, Nyk, Ww
93.	**kalurd*	father's father (FF)	Bd, Nnl, JJ, Nm; Nyk, Ww
94.	**kamirda*	mother's mother (MM)	Jw, Bd, Nnl, JJ, Nm; Ngb; Jk, Yw, Nyk, Ww
95.	**kanarbin*	murderer, ritual killer	Bd, Nnl, JJ, Nm; Jk, Yw, Nyk
96.	*-KANB	become fat/well nourished	Bd, Nnl, JJ, Nm; Yw, Nyk
97.	*-KA(N)MA	laugh	Jw, Bd, Nnl, Nm; Jk, Yw, Nyk, Ww
98.	**kararr*	spit, saliva	Nnl, JJ, Nm; Jk, Yw, Nyk, Ww
99.	*-KARD	enter, go in	Jw, Bd, Nnl, JJ, Nm; Yw ('disappear'), Nyk, Ww
100.	**karn-*	clapsticks	Bd, Nnl, JJ, Nm; Yw, Nyk
101.	**karrabulu*	kangaroo species, large	Bd, Nnl; Jk, Yw, Nyk

102.	**karrbina*	shield	Nnl, JJ, Nm; Jk, Yw, Nyk, Ww
103.	**kawu*	call out	Bd?, Nnl, JJ, Nm; Jk, Yw, Nyk, Ww
104.	**kiny*	choke, strangle	Bd & Nnl (also 'shut'), JJ, Nm; Yw, Nyk, Ww
105.	**kinya*	this, he, she, it	Jw, Bd, Nnl, JJ, Nm; Ngb; Jk, Yw, Nyk, Ww
106.	**kudarrawany*	brolga	Jw, Bd, Nnl; Jk, Yw
107.	**kujarra*	two	Jw, Bd, Nnl, JJ, Nm; Jk, Yw, Nyk, Ww
108.	**kularr*	west	Jw, Bd, Nnl, JJ, Nm; Jk, Yw, Nyk, Ww
109.	**kulamana*	frill-necked lizard	Jw, Bd, Nnl, JJ, Nm; Yw, Nyk, Ww
110.	**kulin*	sleep	Bd, JJ; Ngb; Jk, Yw, Nyk, Ww
111.	**kumbarri*	yellow	Jw, Bd, Nnl, Nm; Jk, Yw, Nyk, Ww
112.	**kunbulu*	blood	Bd, Nnl, JJ; Yw, Nyk, Ww
113.	**kundi*	carry on shoulder, shoulder	Jw, Bd, Nnl, JJ, Nm; Jk, Yw, Nyk, Ww
114.	**kunykuny*	brain, spinal marrow	Bd, Nnl, JJ, Nm; Yw, Nyk, Ww
115.	**kurlibil*	saltwater turtle	Jw, Bd, Nnl, JJ, Nm; Jk, Yw, Nyk, Ww
116.	**kurridi*	dingo	Jw, Bd, Nnl, JJ, Nm; Jk, Yw, Nyk, Ww
117.	**kurrwal*	sky	Jw, Bd, Nnl, JJ, Nm; Jk, Nyk, Ww
118.	**kururr*	blood	Bd, Nnl, JJ; Jk, Nyk
119.	**kuwan*	pearlshell	Jw, Bd, Nnl, JJ, Nm; Jk, Yw, Nyk
120.	**-lababa*	ear	Nnl, JJ, Nm; Ngb; Jk, Nyk, Ww?
121.	**lakal*	climb	Jw, Bd, Nnl, JJ, Nm; Jk, Yw, Nyk, Ww
122.	*-LAKARRA	hear	Jw, Nnl, JJ, Nm; Jk, Nyk, Ww
123.	**lalka*	dry	Jw, Bd, Nnl, JJ, Nm; Yw
124.	**-lamarr*	ear passage	Jw, Bd; Nyk ('burrow')
125.	**langan*	throat, neck	Jw, Bd, Nnl, JJ, Nm; Jk, Nyk, Ww
126.	*-LANGKA	know, understand, recognise	Bd, Nnl, JJ, Nm; Yw, Nyk, Ww
127.	**langkurr*	possum	Jw, Bd, Nnl, JJ, Nm; Jk, Yw, Nyk
128.	**lanyb*	steal, abduct	Jw, Bd, Nnl, JJ, Nm; Jk, Yw, Ww
129.	**layda*	fat, grease	Jw, Bd, Nnl, JJ; Jk, Yw
130.	**limba*	sour taste	Bd, Nnl, JJ, Nm; Yw
131.	**linyju*	sour taste	Bd, Nnl, JJ, Nm; Nyk
132.	**linykurra*	saltwater crocodile	Jw, Bd, Nnl, JJ; Jk, Yw, Nyk, Ww
133.	**-lirr*	mouth	Jw, Bd, Nnl, JJ, Nm; Ngb; Jk, Yw, Nyk, Ww
134.	**liyan*	heart, emotion	Jw, Bd, Nnl, JJ, Nm; Ngb; Jk, Yw, Nyk, Ww
135.	**lungkura*	bluetongue lizard	Bd, Nnl, JJ, Nm; Yw, Nyk
136.	*-LURRU	burn	Jw, Bd, Nnl, JJ, Nm; Yw, Ww
137.	*-MA	put	Jw, Bd, Nnl, JJ, Nm; Jk, Yw, Nyk, Ww
138.	**majal*	afternoon	Bd, Nnl, Nm; Jk, Yw & Ww ('yesterday')
139.	**makirr*	path, road	Jw, Bd, Nnl, JJ, Nm; Jk, Yw, Nyk
140.	**malbulu*	bag, coolamon	Bd, Nnl, JJ, Nm; Jk, Nyk, Ww
141.	**-mal(ul)*	nose	Jw, Bd, Nnl, JJ, Nm; Ngb; Yw

142.	**-mandarr*	shadow, reflected image	Jw, Bd, Nnl, JJ, Nm; Jk, Yw
143.	**mangkayarra*	bustard, scrub turkey	Nnl; Yw, Nyk, Ww
144.	**-manya*	throat	Bd, Nnl, JJ, Nm; Jk ('nape'), Yw
145.	**-marla*	arm, hand	Jw, Bd, Nnl, JJ, Nm; Jk, Yw, Ww
146.	**marr-*	hungry	Nnl, JJ, Nm; Jk, Yw, Nyk, Ww
147.	*-MARRA	burn	Jw, Bd, Nnl, Nm; Nyk, Ww
148.	**-marraj*	shadow, reflection	Bd?, Nnl, JJ, Nm; Nyk, Ww
149.	**marru*	head	Bd, Nm; Yw, Nyk
150.	**mayi*	vegetable food	Jw, Bd, Nnl, JJ, Nm; Jk, Yw, Nyk, Ww
151.	**-mbarrma*	armpit	Nnl; Jk, Ww
152.	**-mbala*	foot	Jw, Bd, Nnl, JJ, Nm; Ngb; Jk, Yw?, Nyk, Ww
153.	**mida*	male of species	Bd, Nnl, JJ; Jk, Nyk, Ww
154.	**-midi*	shin, knee	Jw, Bd, Nnl, JJ, Nm; Ngb; Jk, Yw, Nyk, Ww
155.	**miila*	lie, untruth	Bd, Nnl, Nm; Nyk, Ww
156.	**mijala*	be sitting down	Jw, Bd, Nnl, JJ, Nm; Ngb; Jk, Yw, Nyk, Ww
157.	*-MILKA	arise, get up, wake up	Jw, Bd, Nnl, JJ, Nm; Yw?, Nyk, Ww
158.	**milkin*	stick implement	Jw, Bd, Nnl, JJ, Nm; Ngb; Jk, Nyk, Ww
159.	**mil(y)ku*	ankle, joint	Bd, Nnl, JJ, Nm; Yw, Nyk, Ww ('knee')
160.	**mimi*	grandparent/grandchild (dimin.)	JJ; Ngb; Yw, Nyk
161.	**-miny*	eye	Jw, Bd, Nnl, JJ, Nm; Ngb; Jk, Yw
162.	**minyjan*	only	Bd, Nnl, JJ, Nm; Yw, Nyk, Ww
163.	**nawurla*	club, nulla nulla	Jw, Bd, Nnl, JJ, Nm; Jk, Nyk, Ww
164.	**ngaarri*	devil, bad spirit	Jw, Bd, Nnl; Jk, Yw ('cannibal'), Nyk, Ww
165.	**ngabaliny*	woomera	Bd, Nnl, JJ, Nm; Yw, Nyk
166.	**ngak*	spongy, hollow	Bd, Nnl, JJ, Nm; Nyk
167.	*-NGALKA	cry	Jw, Bd, Nnl, JJ, Nm; Ww
168.	**ngamarna*	breast	Jw, Bd, Nnl, JJ, Nm; Yw, Nyk, Ww
169.	**nganka*	language, speech, speak	Jw, Bd, Nnl, JJ, Nm; Jk, Yw, Nyk, Ww
170.	**nganyji*	interrogative particle	Jw, Bd, Nnl, JJ, Nm; Jk, Yw, Nyk, Ww
171.	*-NGARI	leave	JJ; Yw, Nyk, Ww
172.	**ngimbirr*	night?	Nnl, JJ, Nm; Nyk ('tomorrow, morning')
173.	**-ngu*	belly	Jw, Bd, Nnl, JJ, Nm; Jk, Yw, Nyk, Ww
174.	**ngudirr*	alone, by oneself	Bd, Nnl, JJ, Nm; Yw, Nyk
175.	*-NGULA	throw	Jw, Bd, Nnl, JJ, Nm; Jk, Yw
176.	**ngul(y)ku*	beard (WNN 'feelers of catfish')	Nnl, JJ, Nm; Yw, Nyk, Ww
177.	**ngurlun*	ashes	Bd ('hot sand'); Jk, Yw, Nyk, Ww ('cooked')
178.	**ngurndu*	piss, urine	Bd, Nnl, JJ, Nm; Nyk
179.	**ngurra*	night	Jw, Bd; Jk, Yw, Ww
180.	*-NI ~ *-NGA	be, sit	Bd, Nnl, JJ, Nm; Jk, Yw, Nyk, Ww

181.	**niimar(r)*	sandhill	Bd, Nnl, JJ, Nm; Yw, Nyk
182.	**nimanburru*	flying fox	Jw, Bd, Nnl, JJ, Nm; Jk, Yw
183.	**ningarra*	true, really	Bd, Nnl, JJ, Nm; Jk, Nyk, Ww
184.	**niyarra*	tasty, sweet	Bd, Nnl, JJ, Nm; Yw, Nyk, Ww
185.	**nulu*	corroboree, song	Nnl, JJ, Nm; Jk, Yw, Nyk, Ww
186.	**nundurr*	hot, sweat	Jw, Bd, Nnl, JJ, Nm; Jk, Yw?, Nyk
187.	**nunyji*	alive	Jw, Bd, Nnl, JJ, Nm; Yw, Nyk, Ww
188.	**nurru*	fire, (hot) coals	Jw, Bd; Jk, Yw ('burn out'), Nyk
189.	*-NYA	get, catch, pick up	Jw, Bd, Nnl, JJ, Nm; Jk, Yw
190.	*-RA	pierce, spear	Bd ('pick lice'), Nnl, JJ, Nm; Jk, Yw, Nyk, Ww
191.	**rambarr*	parent-in-law (male) (WF?, HF)	Bd, Nnl, JJ; Jk, Yw, Nyk, Ww
192.	**rangin*	parent-in-law (female) (WM, HM)	Bd, Nnl, JJ; Yw, Nyk, Ww
193.	**riiji*	pubic covering for initiated man	Bd, Nnl, JJ; Yw, Nyk
194.	**rirrka*	charcoal	Jw, Bd, Nnl, JJ, Nm; Jk, Yw
195.	*-RLI	eat	Jw, Bd; Yw, Nyk, Ww
196.	**rurrb*	exchange, return, in turn, barter	Bd ('pass, surpass'), Nnl, JJ; Jk, Yw, Nyk
197.	**-uru*	anus	Bd, Nnl, JJ, Nm; Yw, Nyk
198.	**waangka*	suddenly, unexpectedly	Bd, Nnl, JJ, Nm; Yw, Nyk
199.	**walak*	frog type	Nnl, Nm; Jk, Yw, Nyk, Ww
200.	**walka*	sun	Jw, Bd, Nnl, JJ, Nm; Yw ('dry up'), Nyk
201.	**wamba*	man	Bd, Nnl, JJ, Nm; Ngb; Jk, Yw, Nyk, Ww
202.	**wandarl*	coolamon type	Nnl, JJ; Jk, Yw, Nyk
203.	**wangal*	wind	Nnl, JJ, Nm; Jk, Yw, Nyk, Ww
204.	**wangalangu*	young man	Jw, Bd, Nnl, JJ, Nm; Yw, Nyk, Ww
205.	**wangkarra*	spider, spider's web, net	Jw, Bd, Nnl, Nm; Jk, Yw, Nyk, Ww
206.	**wangkaya*	wattle type	Bd, Nnl, JJ; Yw, Nyk, Ww
207.	**wangkidi*	crow	Jw, Bd, Nnl, JJ, Nm; Jk, Ww
208.	**warany*	other	Jw, Bd, Nnl, JJ, Nm; Jk, Yw, Nyk, Ww
209.	**waranyjarri*	one	Jw, Bd, Nnl, JJ, Nm; Jk, Yw, Nyk, Ww
210.	**wardiya*	north	Bd, Nnl, JJ, Nm; Jk, Ww ('west')
211.	**warli*	meat	Jw, Bd, Nnl, JJ, Nm; Jk, Yw, Nyk, Ww
212.	**wara*	rag, cloth	Bd, Nnl, JJ, Nm; Yw, Nyk
213.	**wiirri*	rib	Jw, Bd, Nnl; Jk, Yw, Nyk, Ww
214.	**winini*	emu	Jw, Bd, Nnl, JJ, Nm; Jk, Nyk & Ww ('emu chick')
215.	**wirnka*	louse	Bd?, Nnl, JJ, Nm; Nyk
216.	*-WIRRIK	taste, try	Nnl, JJ, Nm; Yw, Nyk
217.	*-WU	give	Jw, Bd, Nnl, JJ, Nm; Jk, Yw, Nyk, Ww
218.	**wula*	water	Jw, Bd, Nnl, JJ, Nm; Ngb; Jk, Yw, Nyk, Ww
219.	**wungul*	joke, fun	Bd ('unborn child, be pregnant'), Nnl, JJ; Jk, Yw, Nyk, Ww

220.	**yadab*	crawl	Jw, Bd, Nnl, JJ, Nm; Jk, Yw, Nyk, Ww
221.	**yaku*	husband (H, HB)	Nnl, JJ, Nm; Jk, Yw, Nyk, Ww
222.	**yalirr*	ahead, front, first	Bd, Nnl, JJ, Nm; Yw
223.	**yalku*	standing	Nnl, JJ; Jk, Yw, Nyk, Ww
224.	**yalmban*	south (WNN 'south wind')	Jw, Bd, Nm; Jk, Yw, Nyk, Ww
225.	**yaly*	lick	Nnl, JJ; Yw, Nyk, Ww
226.	**-yangala*	tongue	Jw, Bd, Nnl, JJ, Nm; Ngb; Jk, Nyk, Ww
227.	**yangki*	who, what	Jw, Bd, Nnl, JJ, Nm; Jk, Yw, Nyk, Ww
228.	**yarnkal*	woomera	Jw, Bd, JJ, Nm; Ww
229.	**yarri*	no, not	Jw, Bd, Nnl, JJ, Nm; Yw ('nothing'), Nyk & Ww ('disappear')
230.	**yibala*	father (F, FB)	Nnl, JJ, Nm; Ngb; Jk, Nyk, Ww
231.	**yiika*	sickness	Jw, Bd, Nnl, JJ, Nm; Nyk, Ww
232.	**yila*	dog	Jw, Bd, Nnl, JJ, Nm; Ngb; Jk, Yw, Nyk, Ww
233.	**yinar*	disharmonic generation	Bd, Nnl, JJ; Jk ('relative'), Nyk, Ww
234.	**yirrakulu*	wattle type (used for spears)	Jw & Bd ('spear'); Jk, Yw, Nyk
235.	**yirrkili*	tree type (boomerang)	Bd, JJ, Nm; Yw, Nyk, Ww
236.	**yuwurr*	descend, sink, go down	Bd, Nnl; Nyk, Ww

Appendix 2: Reconstructed Proto Western Nyulnyulan lexemes

237.	**alik*	bad, sick, trouble	Bd, Nnl, JJ, Nm
238.	**arri*	no, not	Jw, Bd, Nnl, JJ, Nm
239.	**baab*	open	Bd, Nnl, JJ, Nm
240.	**baali*	belt, girdle	Jw, Bd, Nnl, JJ, Nm
241.	**bamburr*	blind	Jw, Bd, Nnl, JJ, Nm
242.	**banangkarr*	now, today, when	Jw, Bd, Nnl, JJ, Nm
243.	**bandakar(r)*	groin	Bd, Nnl, JJ, Nm
244.	*-(BA)NGAR	praise	Bd, Nnl, JJ, Nm
245.	*-BANY	finish	Bd, Nnl, JJ, Nm
246.	**bardangk*	stick, tree	Jw, Bd, Nnl, JJ, Nm; Ngb
247.	**bardun*	skin, bark (of tree)	Jw, Bd, Nnl, JJ, Nm
248.	**barnkard*	king brown snake	Bd, Nnl, JJ, Nm
249.	*-BARRKAND	tie	Jw, Bd, Nnl, JJ
250.	**barrdi*	yesterday	Jw, Bd, Nnl, JJ, Nm
251.	**buini*	rotten	Bd, Nnl, JJ, Nm
252.	**bunmal*	strong, firm, fearless	Bd, Nnl, JJ, Nm
253.	**bilibil*	leaf	Jw, Bd, Nnl, JJ, Nm
254.	**bindan*	bush country	Jw, Bd, Nnl, JJ, Nm; Jk?
255.	**bindikal*	bad luck	Bd, Nnl, JJ, Nm
256.	**binyj*	cold	Bd, Nnl, JJ, Nm

257.	**-birndi*	long	Jw, Bd, Nnl, Nm
258.	**birray*	mother (M, MZ)	Jw, Bd, Nnl, JJ, Nm
259.	**buna*	blunt	Bd, Nnl, JJ, Nm
260.	*-BUNGKUM	swell up	Bd, Nnl, JJ, Nm
261.	**burruk*	kangaroo (generic)	Jw, Bd, Nnl, JJ, Nm
262.	**darr*	arrive, emerge, come	Jw, Bd, Nnl, JJ, Nm
263.	**darrgal*	true	Bd, Nnl, Nm
264.	**diwa*	hard (not soft)	Jw, Bd, Nnl, JJ, Nm
265.	**duk*	wipe	Bd, Nnl, JJ, Nm
266.	**irrjuwarr*	three	Jw, Bd, Nnl, JJ, Nm
267.	**iyi*	yes	Bd, Nnl, JJ, Nm
268.	**jakurd*	return	Bd, Nnl, JJ, Nm
269.	*-JARIK	fear	Jw, Bd, Nnl, JJ, Nm
270.	*-JID	go	Jw, Bd, Nnl, JJ, Nm
271.	*-JIDING	touch	Jw, Bd, Nnl, JJ, Nm
272.	*-JIMB	die	Jw, Bd, Nnl, JJ, Nm
273.	**jimbijimb*	arms akimbo	Bd, Nnl, JJ, Nm
274.	**jimbilad*	downwards	Bd, Nnl, JJ, Nm
275.	**jirrjirr*	stand up, come to a stand	Jw, Bd, Nnl, JJ?, Nm
276.	*-JULUK	wash	Jw, Bd, Nnl, JJ, Nm
277.	**-ka*	back	Jw, Bd, Nnl, JJ, Nm
278.	*-KAL	wander about, roam	Bd ('live at place'), Nnl, JJ, Nm
279.	*-KALAK	approach, come up to	Bd, Nnl, JJ, Nm
280.	**kalib*	fire drill	Bd, Nnl, JJ
281.	*-KAND	scratch	Jw, Bd, Nnl, JJ
282.	*-KANYB	vomit	Bd, Nnl, JJ, Nm
283.	**karangkam*	yam type	Jw, Bd, Nnl, JJ, Nm
284.	**-karda*	body	Jw, Bd, Nnl, JJ, Nm
285.	**karrambal*	bird	Jw, Bd, Nnl, Nm
286.	**karrji*	sharp	Bd, Nnl, JJ, Nm
287.	**karrm*	later, soon	Bd, Nnl, JJ, Nm
288.	**kiir*	scent, smell	Bd, Nnl, JJ, Nm
289.	**-kinbal*	appearance, shape, form	Bd, Nnl, JJ, Nm
290.	**kubad*	wet (of object)	Jw, Bd, Nnl, JJ, Nm
291.	**kubul*	father	Jw, Bd, Nnl, JJ
292.	**kuly*	squeeze	Bd, JJ, Nm
293.	**kumb*	wedge	Bd, Nnl, JJ, Nm
294.	**kurrbal*	throat	Jw, Bd, Nnl, JJ, Nm
295.	**laaban*	feather	Bd, Nnl, Nm
296.	**labalab*	light (not heavy)	Bd, Nnl, JJ?, Nm
297.	**lakurr*	egg	Jw, Bd, Nnl, JJ, Nm
298.	*-LANDA	sit down	Jw, Bd, Nnl, JJ, Nm
299.	**layib*	good	Bd, Nnl, JJ, Nm

300.	**maanka*	black	Jw, Bd, Nnl, JJ, Nm
301.	**maara*	far	Jw, Bd, Nnl, JJ, Nm
302.	**malirr*	wife	Jw, Bd, Nnl, JJ, Nm
303.	**-mana*	many	Jw, Bd, Nm
304.	*-MANKARDA	leave	Jw, Bd, Nnl, Nm
305.	*-MANY	wave (hand)	Bd, Nnl, JJ, Nm
306.	**marrir*	sister (Z)	Jw, Bd, Nnl, JJ, Nm; Ngb
307.	**mayala*	goanna	Jw, Bd, Nm
308.	*-MI	search, look for	Jw, Bd, Nnl, JJ, Nm
309.	**mijaw*	native rat	Jw, Bd, Nnl, JJ, Nm; Jk/Ngb?
310.	*-MIL	sing	Bd, Nnl, JJ, Nm
311.	**milamb*	tired	Bd, Nnl, JJ, Nm
312.	*-MINGKA	choke (on something)	Jw, Bd, Nnl, JJ, Nm
313.	**mula*	warm, hot (of weather)	Jw, Bd, Nnl, JJ, Nm
314.	**mukarn*	head hair	Jw, Bd, Nnl, JJ, Nm; Ngb
315.	**-mungku*	knowledge, knowledgeable	Jw, Bd, Nnl, JJ, Nm
316.	**-mungkul*	root	Jw, Bd, Nnl, JJ, Nm
317.	**mungu*	honey	Jw, Bd, Nnl, JJ, Nm
318.	*-MUR	pour, spill out, flow	Jw, Bd, Nnl, JJ, Nm
319.	*-MURRAR	smell	Bd, Nnl, JJ, Nm
320.	**murrulu*	small	Jw, Bd, Nnl, JJ, Nm
321.	*-NGALI	soil, make dirty, become dirty	Bd, Nnl, JJ, Nm
322.	*-NGALINY	defend, take sides with	Bd, JJ, Nm
323.	*-NGA(N)NY	deny, refuse	Bd, Nnl, JJ, Nm
324.	**ngijil*	mud	Jw, Bd, Nnl, JJ, Nm
325.	**-ngkan*	neck (exterior)	Jw, Bd, Nnl, JJ, Nm; Ngb
326.	**ngub*	soft	Jw, Bd, Nnl, JJ, Nm
327.	**ngunyb*	dirty	Jw, Bd, Nnl, JJ, Nm
328.	**ngurrungk*	knee	Bd, Nnl, JJ, Nm
329.	**-nkarra*	forehead	Jw, Bd, Nnl, JJ, Nm
330.	**-nmurr*	thigh	Jw, Bd, Nnl, JJ, Nm
331.	**nyungurl*	old man	Jw, Bd, Nnl, JJ
332.	*-RALK	dry	Bd?, Nnl, JJ, Nm
333.	*-RAMB	warm oneself	Bd, Nnl, JJ, Nm
334.	**rambin*	heavy	Jw, Bd, Nnl, Nm
335.	**rung*	suck	Bd, Nnl, JJ, Nm
336.	**wadan*	cloud	Bd, Nnl, JJ
337.	**-wala*	tail	Jw, Bd, Nnl, JJ, Nm
338.	**walirr*	lie on back	Bd, Nnl, JJ, Nm; Ngb
339.	**warrikana*	eagle	Jw, Bd, Nnl, JJ, Nm; Ngb?
340.	**wardi*	north	Jw, Bd, Nnl, JJ, Nm
341.	**wungur*	rain	Bd, Nnl, JJ
342.	**wurany*	woman	Jw, Bd, Nnl, JJ, Nm

343.	**wurrul*	fingernail	Jw, Bd, Nnl, JJ, Nm
344.	**yalangkun*	elbow	Jw, Bd, Nnl, JJ, Nm
345.	**yalirr*	mother-in-law of man (WM)	Jw, Bd, Nnl, JJ, Nm
346.	**yambun*	together	Jw, Bd, Nnl, JJ, Nm; Jk
347.	**yandal*	inquest sticks	Bd, Nnl, JJ, Nm
348.	**yangan*	near, close	Jw, Bd, Nnl, JJ, Nm
349.	**yarr*	pull	Jw, Bd, Nnl, JJ, Nm
350.	**yubur(r)yubur(r)*	native mouse	Bd, Nnl, JJ, Nm

Appendix 3: Reconstructed Proto Eastern Nyulnyulan lexemes

351.	**baalu*	tree, stick	Jk, Yw, Nyk, Ww
352.	**bakuna*	hither, this way	Jk, Yw, Nyk, Ww1
353.	**balngan(y)-*	thigh	Jk, Nyk, Ww
354.	*-BANYJU	smell	Jk, Yw, Nyk, Ww
355.	**barra*	thirsty	Jk?, Yw, Nyk?, Ww
356.	*-BARRI	hit by throwing	Yw, Nyk, Ww
357.	**barrjanin*	kangaroo	Jk, Yw, Nyk; Ngb
358.	**barulu*	catfish	Jk, Yw, Nyk, Ww
359.	**bilyi*	red	Yw, Nyk, Ww
360.	**birra*	bush country	Yw, Nyk, Ww
361.	**birrb*	turn off	Yw, Nyk, Ww
362.	*-BULA	arrive, come	Jk, Yw, Nyk, Ww
363.	**dub*	white	Yw, Nyk, Ww
364.	**durlbu*	heart	Yw, Nyk, Ww
365.	**inyja*	walk, walkabout	Jk, Nyk, Ww
366.	**jabula ~*jakula*	mud	Jk, Yw, Nyk, Ww
367.	**jalbi*	camp	Yw, Nyk, Ww
368.	**jarndu*	woman	Jk, Yw, Nyk, Ww; Ngb
369.	**jarrbal*	hip	Jk, Yw, Nyk
370.	**jirrbal*	forehead	Jk ('cloud'), Yw, Nyk, Ww
371.	**ka-*	that	Jk, Yw, Nyk, Ww
372.	**kabu*	eat	Jk, Yw, Nyk, Ww
373.	**kambiy*	egg	Yw ('testicle'), Nyk, Ww
374.	**kanyjirr*	watch, stare at	Yw, Nyk, Ww
375.	**kirridiny*	moon	Jk, Yw, Nyk
376.	**karrikin*	body	Yw, Nyk, Ww
377.	*-KULA	tie	Yw, Nyk, Ww
378.	**kurrbuk*	vomit	Yw, Nyk, Ww
379.	**laj*	throw	Yw, Nyk, Ww
380.	**-lany*	flesh, muscle	Yw, Nyk, Ww
381.	**maabu*	good	Jk, Yw, Nyk, Ww
382.	**makarra*	tail	Jk, Yw, Nyk, Ww

383.	**mandu*	rotten, stink	Jk, Yw, Nyk, Ww
384.	**mangul*	spear type	Jk, Yw, Ww
385.	**manyja*	many	Jk, Yw, Nyk, Ww
386.	**marlu*	no, not	Jk, Yw, Nyk, Ww
387.	**-marrangka*	hand	Jk, Nyk, Ww
388.	*-MURUNGU	search, look for	Yw, Nyk, Ww
389.	**ngalyak*	blue tongue lizard	Yw, Nyk, Ww
390.	**ngawayi*	yes	Jk, Yw, Nyk, Ww
391.	**nguni-*	nose	Jk, Yw, Nyk, Ww
392.	**ngunu*	sister (Z)	Jk, Yw, Nyk, Ww
393.	**ngurrangurra*	afternoon	Yw, Nyk, Ww
394.	**ngurun*	smoke	Jk, Yw, Nyk, Ww
395.	**nila*	knowledge, knowledgeable	Jk, Yw, Nyk, Ww
396.	**walakurru*	eagle-hawk	Yw, Ww
397.	**wanangarri*	stone	Jk, Yw, Nyk, Ww
398.	**wangkurr*	cry	Jk, Yw, Nyk, Ww
399.	**wanyji*	later, soon	Jk, Yw, Nyk, Ww
400.	**widij*	dig	Jk, Yw, Nyk, Ww
401.	**windirri*	belt	Yw, Nyk, Ww
402.	**wirdu*	big	Jk, Yw, Nyk
403.	**wirrkiny*	leaf	Jk, Yw, Nyk, Ww
404.	**wuba*	small	Jk, Yw, Nyk, Ww; Ngb
405.	**wurr*	rub	Yw, Nyk, Ww

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3 *Headward migration: a Kimberley counter-example*

PATRICK McCONVELL

1 Head and dependent marking[1]

Nichols (1986) has introduced what she believes to be a significant typological distinction between languages: head marking (HM) versus dependent marking (DM), and this has subsequently been taken up by a number of authors. As she states, this is a fairly straightforward distinction, as most grammarians agree on what syntactic heads and dependents are, and what constitutes morphological marking on these. In her view, some languages have a mixture of the two types, but many languages tend to gravitate towards one or other of the polar types. Nichols is probably too sanguine about the extent of agreement among linguists about what heads are (cf. Corbett et al. eds (1993), and the proliferation of proposals about new functional heads in GB/Minimalism, e.g. Belletti and Rizzi eds (1996)), but for our purposes we need not enter into those disputes.

The head-dependent marking distinction refers to various syntactic levels. I shall mainly be concerned with the *clause* level here. The most salient feature is the phenomenon of pronominal affixation on verbs in head-marking languages, contrasting with NP case-marking in dependent-marking languages. This distinction is parallel to the notion of Verb-coding and Noun-coding languages (Keenan 1972; see also Capell 1965). Clearly many Australian languages, particularly non-Pama-Nyungan languages, have both types of marking. Nichols (1986: 97) calls such languages 'double-marking' and claims that this is a typological feature of Australian languages, and of non-Pama-Nyungan languages in particular. She adds an implicational hierarchy (Figure 1 below) about the distribution of different types of marking in languages which are mixed typologically in this way, which seems to predict quite well some generalisations about non-Pama-Nyungan languages (1986:75). In particular it predicts that the more 'peripheral' NPs are, the more likely they are to be case-marked (dependent-marking), and the more 'nuclear' NPs are, the more likely they are to be cross-referenced on the verb (head-marking).

1 I would like to thank Johanna Nichols and Frances Kofod for comments.

Nicholas Evans, ed. *The non-Pama-Nyungan languages of northern Australia: comparative studies of the continent's most linguistically complex region*, 75–92.
Canberra: Pacific Linguistics, 2003.

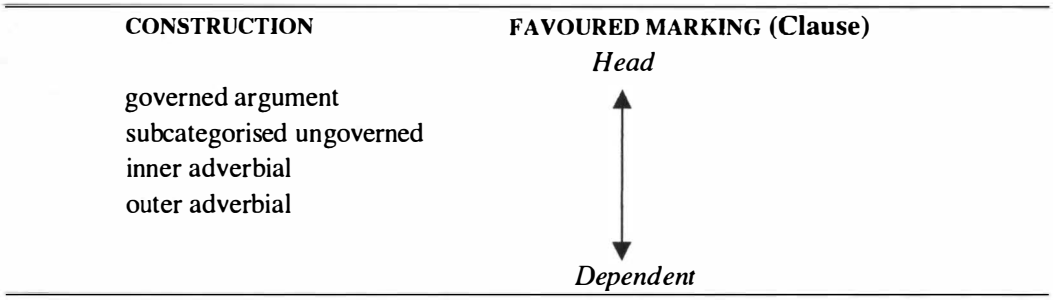

Figure 1: Nichols' hierarchy: distribution of marking types in typologically mixed languages

Nichols proposes a fourfold classification of languages: head-marking; dependent-marking; double-marking; and without marking (i.e. with little or no inflectional morphology). Lying outside this basic scheme is a further type which she calls 'neutral marking'. This is exemplified by languages which attach clitic pronouns neither to head nor dependent, but where clitic placement is determined by constituent or prosodic boundaries, independent of head and dependent. In Australia such types include placement in second position in the clause and enclitisation to modal-aspectual auxiliaries or catalysts, and complementisers. Elsewhere (McConvell 1996) I argue that many of these can be analysed as head-marking, — not marking of the verb head, but of C(omp) or I(nfl). I return to this issue later, but for now I assume, along with Nichols, that the verb is the relevant head for the clausal domain.[2]

Nichols hypothesises that linguogenetic groupings of languages tend to adhere to one or other of the types HM or DM, based on a statistical generalisation. One might however expect perturbations of the pattern by radical reanalysis either for language-internal reasons (see McConvell 1981) or perhaps because of the influence of languages of the opposite type in the context of high levels of contact and multilingualism (Heath 1978, 1979). Such changes of type would then be inherited and could influence the overall balance of types in a linguogenetic subgroup. Advocates of the position that the Pama-Nyungan family (predominantly DM) is a subgroup of the Australian phylum, which was originally more typologically akin to present non-Pama-Nyungan languages (predominantly HM), would presumably adopt such a model of change.

Nichols also however posits a strong evolutionary constraint on the direction of language change with regard to the HM/DM parameter — *Headward Migration*. This constraint, if valid, would act to restrict the variety of types of marking found in a language family, and would for instance erect a barrier against the development of DM Pama-Nyungan from HM languages discussed above. I argue below that there exists at least one counterexample to the Headward Migration constraint, in one non-Pama-Nyungan family, Jarragan, where change in marking has occurred in the opposite direction from that predicted: the creation of new case-marking on nouns from old pronominal enclitics on verbs. While this phenomenon has not been exhaustively studied on a wider scale, indications are that this is not an isolated

2 Nichols misconstrues Western Desert clitic placement, which is second-position, as head-marking (on the verb) and therefore classifies this and by implication other Pama-Nyungan languages as 'double-marking' (1986:97). Pronominal clitics on the verb are found in Pama-Nyungan languages, often only in certain constructions, but this type of placement is relatively rare as a categorical feature of the syntax. Nichols does describe auxiliaries as 'heads' at one point but this is apparently inconsistent with other statements.

exception, and therefore that the existence of the Headward Migration constraint must be called into question.

2 Headward migration

The main hypothesis launched by Nichols' (1986:86) paper is that of *Headward Migration:*

> If any adposition or piece of affixal morphology moves, it will go from the dependent to the head of the constituent, not vice-versa.

One category of apparent exceptions excluded by Nichols from this generalisation are those in which a head is reduced to a marker on a former dependent e.g. a postposition becoming a case suffix (1986:87):

> Reversal of the headward-migration principle can only occur because of boundary-shifts.[3]

I wish to suggest, on the contrary, that the opposite process to headward migration has indeed gone on in the Jarragan. The dependent-ward migration that I am proposing is not moreover an instance of boundary shift, so cannot be excepted on those grounds. The process in Jarragan involves the conversion of erstwhile pronominal enclitics on the verb into enclitics on the dependent NPs.

There are three functional motivations contributing to this change internal to the Jarragan languages:

- the existence of only one slot for oblique pronominal enclitics after the verb, resulting in pressure to find other ways of expressing more than one oblique NP per clause;
- the use of some oblique (indirect object and locative) clitics to cross-reference direct objects under certain circumstances; and
- the model of postnominal pronominal clitics in possessive noun phrases.

The influence of nearby Pama-Nyungan languages, which are dependent-marking in Nichols's terms, cannot be discounted in explanation of the change. I conclude however in a later section that influence from languages in contact has probably not been a factor in this case.

Nichols actually provides the seeds of a functional critique of the 'headward migration' hypothesis towards the end of the same paper in which the hypothesis is proposed. She concedes that her two types of languages are different in terms of inherent functional dynamic: head-marking languages are faced with a problem which does not affect dependent-marking languages: 'the problem of just which actant stands in which of the relations marked on the verb' (Nichols 1986:113). She outlines five possible 'solutions' (i.e.

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[3] Nichols (1986:84) rejects Sapir's preferred explanation of the conversion of nominal postpositions into verbal prefixes in Hupa as an instance of simple boundary movement. Rather, she regards this hypothesised change, and other similar ones, as examples of headward migration. The synchronic consequence of these changes in Hupa, Abkhaz etc. is a choice between head (verbal) and dependent (nominal) marking, quite similar to the situation to be described in the Jarragan languages in this paper. In the Jarragan case there is no justification for a diachronic explanation in terms of headward migration.

historical outcomes) to the problem, all of which could probably be exemplified from the history of languages. Among these, (d) reads

> Mark the dependents themselves. This principle accounts for the desultory case inflection sometimes found in otherwise head marking languages ... and for the double-marked clause type

Nichols is thus stating that head marking languages can, for very good functional reasons, move towards greater dependent marking. In order to do this, languages must find the material to hand with which to create such marking e.g. case suffixes on NPs. This material would either be other markers with other functions in the same language, or markers borrowed from other languages. Nichols would have to argue, to be consistent with her earlier statements, that the 'principle' of headward migration would rule out the extension of use of material normally enclitic to a head to enclisis on a dependent e.g. the move of pronominal enclitics on a verb to case-like functioning on a noun or noun phrase, and eventual emergence of fully fledged case markers from this process. Is this restriction on type of change inherently likely, given that it appears to block functional pathways of change identified by Nichols herself? What is the functional motivation for disallowing dependent-ward migration? In fact speakers of languages could utilise, and I submit, have utilised, old head-marking morphology to create new dependent markers.

3 The Jarragan languages and their grammar

The East Kimberley is divided by the boundary between Pama-Nyungan (PN) and non-Pama-Nyungan (nonPN) languages. All the languages of the region have cross-referencing of nominal arguments and some adjuncts by pronominal clitics or affixes. The PN languages employ enclitics, mainly on 'catalysts' or non-verbal auxiliaries with modal force. The nonPN languages mainly have pronominal prefixes on verbs. All the languages have a smallish set of monomorphemic verbs (10–40) and rely on compounding of such verbs with coverbs (also known as 'preverbs') to produce the full range of lexical verbs. The tightness of the nexus of coverb and verb increases the further west one moves, with the two elements virtually coalescing in Gooniyandi (nonPN: McGregor 1990) and Walmajarri (PN: Hudson 1978) in the central Kimberley (see also Nash (1982) for a subcategorisation of complex verb types, and McConvell and Schultze-Berndt (2001) for analysis of areal convergence in complex verbs).

In the nonPN Jarragan family (Kija, Miriwung and Kajirrawung[4]) the complex verb consists of a coverb usually followed by an inflecting ancillary verb (occasionally the order may be reversed). The ancillary verb is made up of an obligatory pronominal prefix element; a verb stem; an obligatory pronominal suffix element; an enclitic which is usually optional; a

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4 The term Jarragan (earlier Djerag) derives from the word for 'talk' *jarrak* which is found in this family and other neighbouring languages. The practical orthography in use with Kija, referred to in Hudson and McConvell (1984:51) as the South Kimberley orthography. Miriwung and Kajirrawung use a different orthography with voiced consonants and ‹oo› for ‹u›. In both orthographies ‹e› represents a central vowel. The ethnonym Kajirrawung is used widely in the region but the speakers of this language themselves call it Gajirrabeng. Kija examples are drawn largely from story books published by Ngalangangpum School, Turkey Creek; a few are from unpublished work of Peter Taylor (n.d.), and my own fieldwork, for which I thank Kija people I worked with. I have benefited also from work done on all three Jarragan languages by Frances Kofod.

subordination marker in subordinate clauses; and an optional number marker (which usually refers to subject number). In most cases, the prefix cross-references the subject and the direct object; the suffix cross-references the subject; and the enclitic cross-references an oblique NP (indirect object or affected location).

In this paper I will examine the tendency in Kija (also found in the other Jarragan languages) for oblique pronominal enclitics to become attached to the NP to which they refer rather than to the verb. This involves a clash of principles between what Nichols calls Head and Dependent marking. The current variation between marking patterns is, I suggest, a result of historical change — the addition of a pattern approximating to case marking by means of oblique pronominal enclitics to the pattern of oblique pronominal cross-reference marking on the verb.

4 Coding syntactic function in Kija

In Kija there is no overt marking of either S, A or O functions on NPs and word order is quite free. In pronominal cross-reference on the verb, S, A and O marking differ from each other. In third person there is three way concord with NP arguments on the basis of noun class membership — masculine, feminine and neuter-plural. This does not disambiguate functions where there are two arguments with the same gender, as happens fairly frequently:

(1) *Jiyili-ny thet kini-yit-ji.*
man-M kill himO-hit.PST-heA
'He killed a man.' OR: 'A man killed him.'

Disambiguation is achieved through discourse pragmatics and is not discussed here. There is no optional ergative marking as in neighbouring Gooniyandi to the south-west (McGregor 1990, 1992), which also occurs in the Jarragan language Kajirrawung, but not in Miriwung. In Kija, the situation is more similar to Ungarinyin to the north-west, where there is no case-marking on S, A or O arguments, but only cross-referencing on the verb (Rumsey 1982). In Kija, as in Ungarinyin, gender marking of the bound pronouns sometimes disambiguates, but not in situations like that in (1).

Besides the nuclear argument functions, S, A and O, it is possible to cross-reference a number of other peripheral functions by means of different sets of pronominal enclitics which occur after the verb and subject suffix, set out below in Table 1. Only one clitic can be placed in this position. When an enclitic on the verb expresses a syntactic relation there is no corresponding case marking on the noun phrase (except in the case of the Allative where it is the combination of locative case marking and the enclitic which expresses Allative).

Table 1: Kija oblique pronominal enclitics (third person)

	Locative	Dative	Ablative	Allative
masc	*=ni~=ningi*[5]	*=nhu~=nhungu*	*=nuwa~=nunguwa*	*=kili* [with locative case suffix on NP]
fem	*=ngiyi*	*=nguyu*	*=ngiyiwa*	
neuter/pl	*=pirri*	*=purru*	*=pirriwa*	

5 The forms *=ni(ngi)* and *=nu(ngu)wa* may be heard with a retroflex initial (*=rni* etc.) on occasion, probably due to the neutralisation of the alveolar/retroflex distinction in word/clitic initial position.

THE LOCATIVE enclitic has a wide range of uses including:

- accompanying (person);
- motion towards or contact with;
- person to whom speech is addressed;
- inalienable possession, when used in a NP domain;

THE DATIVE enclitic has uses including:

- benefactive;
- purposive;
- alienable possession, when used in a NP domain;

THE ABLATIVE's uses partially overlap the locative:

- accompaniment;
- source;
- cause.

THE ALLATIVE enclitic is used for motion towards a place, roughly synonymously with the Allative case suffixes *-yurrung* and *-kiny*. The following examples show the distinction between the enclitic (2a) and the case suffixed noun not cross-referenced by the enclitic (2b).

(2) a. *Marra ngena-rt-ke=kili taa-n.*
away I-go-I=ALL camp-LOC
'I am going home.'

b. *Marra ngena-rt-ke taa-yurrung/ taa-kiny.*
away I-go-I camp-ALL camp-ALL
'I am going home.'

Other locative functions may either be encoded by an enclitic (3a), or by a distinct case suffix (3b), but not by both means at the same time (3c).

(3) a. *Parle ngini-wart-ji =ni timana-ny.*
ride he-go.PST-he =himLOC horse-M
'He rode on a horse.'

b. *Parle ngini-wart-ji timana-n.*
ride he-go.PST-he horse-LOC
'He rode on a horse.'

c. **Parle ngini-wart-ji =ni timana-n.*
ride he-go.PST-he =himLOC horse-LOC

Nichols hypothesises that where both head marking and dependent marking exist in a language, head marking will occur at the end of a hierarchy which includes the core argument functions, and dependent marking at the opposite end, of oblique, adjunct functions. Kija and two neighbouring nonPN languages in the Kimberley confirm this prediction. The distribution of the two types of marking can be represented on the same implicational hierarchy for all three languages as in Figure 2 (and for the other Jarragan languages, which are almost identical to Kija in this respect). In all languages the two types of marking overlap in the middle of the hierarchy.

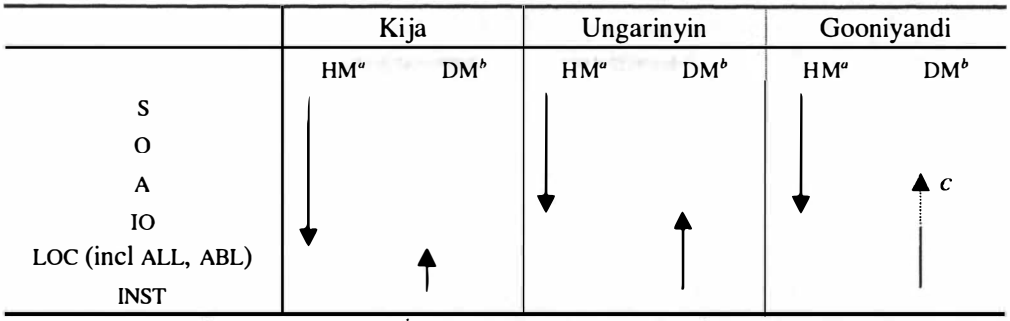

Figure 2: Distribution of HM and DM in three Kimberley nonPN languages

The neighbouring PN languages of the Ngumpin-Yapa subgroup (e.g. Jaru; Tsunoda 1981; Malngin) are different in their syntactic organisation. They have pronominal enclitic marking, usually placed on a 'catalyst' or modal element, sometimes on the first constituent, and occasionally in some languages in some moods, tenses or constructions, on the verb (McConvell 1996). However, such pronominal clitics do not replace the case marking on NPs as in Kija, but complement it. So in the Malngin equivalent of (3), (4a), the third person indirect object enclitic *=rla* can be added to the catalyst *ngu,* indicating an affected location, the horse, which is in the locative case. Omission of the locative marking as in (4b) results in ungrammaticality — this sentence can only mean 'a horse rode on him' since the unmarked noun *timana* 'horse' can only be an absolutive subject.

(4) a. *Jalngak ngu=rla wani-nya timana-la.*
ride CAT=him.IO fall-PST horse-LOC
'He rode on a horse.'

b. **Jalngak ngu=rla waninya timana.*

5 Migration of pronominal enclitics to the NP

In the previous section the pronominal enclitics in Kija have been described as if they always attach to the verb. In fact however they may optionally migrate to a position enclitic to the NP which they cross-reference. Because of the free word order of Kija this may be before or after the verb for any syntactic function. The following paraphrase alternatives are found: (5a) and (5b). Examples (6)–(15) show how the two constructions (HM and DM) have the same basic meaning and function.

5.1 Locative

(5) a. *Jarrak pe-rne=ngiyi Ngaji-l.*
HM: V-enclitic talk IMP-do=herLOC sibling-F
'Talk with Sister!'

b. *Jarrak pe-rne Ngaji-l=ngiyi.*
DM: NP-enclitic talk IMP-do sibling-F=herLOC
'Talk with Sister!'

(6) *Ya-rre-kela=ni Stan Jones-ji.*
HM: V-enclitic weINCL-go-HORT=himLOC Stan Jones-M
'Let's go to Stan Jones!'

(7) *Ta-ngempi piri perra-yin-tu taa-yurrung*
DM: NP-enclitic there-ABL back they-go-DU camp-ALL

kura-ka-l=ngiyi ngapu-ka-ny=ningi.
mother-their-F=herLOC father-their-M=himLOC
'Then they went back home to their father and mother.'

(8) *Kura-kurru-l parri-yi=ngiyi-yu.*
HM: V-enclitic mother-your-F IMPPL-go=herLOC-DU
'You two go to your mother.'

(9) *Marrarn nan-pi-tha-yu taa-kiny*
DM: NP-enclitic away I:you-FUT-take-DU camp-ALL

kura-kurru-l=ngiyi ngayin yirra-nyi=ngarri-yu.
mother-your-F= herLOC I we.be-we=REL-DU
'I'll take you two home to your mother where she and I are staying.'

In the last example the element *ngarri* is a subordinating or relativising enclitic which would precede the oblique pronominal enclitic were one present. It precedes the dual suffix *-yu* in this example. Note that where the oblique pronominal enclitic attaches to the verb, as in (8), the number suffix follows the enclitic, but where the pronominal enclitic attaches to an NP, as in (7) and the main clause of (9), the number suffix remains on the verb and does not accompany the enclitic.

5.2 Dative

(10) *Tek yirri-m-nyi=nhu Makany.*
HM: V-enclitic look we.FUT-get-we=himDAT [name]
'We'll look for Makany'

(11) *Piya ngena-ni marne-m=purru.*
DM: NP-enclitic search I-do.PST fire-N=itDAT
'I looked for firewood'

(12) *Yarr-kela parri-yin=nhu nginyji-ny kayirri-ny.*
HM: V-enclitic stretch-first IMP-hit=himDAT this-M ground.honey-M
'Poke your hand in for this ground sugarbag.'

(13) *Jita-kela nge-nti yilak kurlu-ny =nhu.*
DM: NP-enclitic dig-first I-do.FUT down water-M=himDAT
'I want to dig down for water.'

5.3 Ablative

(14) *Ngapu-ya-ny ngena-yi-rnte=rnuwa kipi-n.*
HM V-enclitic father-REAL-M I-go.PST-HAB=himABL bush-LOC
'I used to go around with my real dad in the bush'

(15) *Manpe-k kini-wurran-ji marne-m=pirriwa.*
DM NP-enclitic black-INCH he-burn.PST-he fire-N=itABL
'He was burnt black from the fire'

In the more northern Jarragan language Miriwung there are parallel sets of pronominal enclitics and these have the freedom to be attached to the verb and the NP which they cross-reference, as in Kija, and, it seems, other constituents (Kofod 1978; see below).

6 Historical evidence for dependent migration

The historical hypothesis being proposed is that the oblique pronominal enclitics above were originally strictly attached to the verb, but later became freer to float away and be attached to the NPs they refer to, thus acquiring some of the characteristics of case markers.

The opposite hypothesis, which would be favoured by the 'headward migration' principle is that these elements were originally NP-markers which became detached and ended up as pronominal enclitics on verbs. One argument against this position is the obvious pronominal origin of the elements. Compare them to third person free pronouns in Kija, Miriwung and Gooniyandi.

(16)				
	Kija:	Masc.sg. *nhawun*	Fem.sg. *ngalen*	Neut/plur. *purru*
	Miriwung:	Masc.sg. *nawu*	Fem.sg. *ngalu*	Neut/plur. *burru*
	Gooniyandi:	Sg.Nom. *niyi*	Sg.Oblique *nhuwu*	Pl.Nom. *piti* Pl.Oblique *pirrangi.*

The Kija masculine singular enclitic *nhu* is cognate with the Kija pronoun *nhawu* and Gooniyandi *nhuwu;* the Kija neuter/plural enclitics *pirri* and *purru* are cognate with all the free pronouns above. On a wider scale these elements are cognate with non-Pama-Nyungan pronouns, bound and free, across a wide area of northern Australia (see Blake 1988 and Harvey this volume).

The gender and number variation in the enclitics would argue against any idea that they originally functioned as case markers. Where the latter occur in non-Pama-Nyungan languages with gender or noun classification generally, and Jarragan languages in particular, they are invariant or have phonologically conditioned allomorphs, not forms varying according to the gender of the noun.[6] Such case markers also attach directly to the stem of the noun, rather than following the gender suffix as enclitics do (e.g. compare the Kija ablative case suffix *-piny* in (17) with the enclitic *=pirriwa* following the neuter suffix in (15) above).

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6 Exceptions to this generalisation are found in some Mindi languages in the Northern Territory; this topic is briefly mentioned at the end of the paper.

(17) *marne-piny*
fire-ABL
'from the fire'

While it seems clear that the pronominal enclitics did not arise from erstwhile case markers, alternative hypotheses might include the idea that the oblique pronominal enclitics were once more free positionally, more like free pronouns, but that they became more tied to the verb through time. In this scenario, attachment to NPs could be considered a remnant of a more diverse placement situation. The somewhat freer placement of enclitics in Miriwung exemplified in (19) below might lend support to such an alternative hypothesis.

However, there is little other support for this idea, and I would imagine that the most cogent reconstruction of non-Pama-Nyungan proto-languages in this region would feature enclitics following the verb. Among the non-Pama-Nyungan languages of the region it is common to encounter oblique enclitic pronouns at the end of the verb as in Jarragan languages, but I do not know of other cases where the alternative placement after NPs is found, apart from Jarragan. It is more likely that the majority situation represents the original position, and that the Jarragan languages innovated away from it in their syntax. The position of the oblique enclitics within the verb before the number suffix tends to indicate an old integration in verb morphology; on the other hand the enclisis to noun phrases is always on the outer periphery, never before other suffixes or enclitics, indicating that the dependent-marking variation is a more recent development.

7 The instrumental

In most cases the oblique pronominal enclitics attached to NPs in Jarragan languages can only be said to *resemble* case-markers in some respects, not to have become case-markers. They do not appear in the typical position for such markers, close to the nominal stem, but follow not only the gender suffixes but also other discourse-pragmatic elements such as *-ka* TOPIC.

(18) *Mani-pawurru-n-nga ngunyju-m-ka=purru.*
money-WITHOUT-M-I tobacco-N-TOP=itDAT
'I have no money for tobacco.'

However in one case, that of the instrumental, a pronominal enclitic has become permanently attached to nouns and has become a case postposition.[7]

The instrumental relation in Kija is expressed by a clitic *=pirri* which has the same form as the neuter-plural locative pronominal enclitic, and like a pronominal enclitic follows the neuter/plural gender suffix *(-m~-pe)* on a noun, but is distinct, having been grammaticised as a case-marker. This morpheme is attached exclusively to the noun, never to the verb. It is not possible to have two tokens of the same type of pronominal enclitic (i.e. locative, dative or ablative) in the same clause in Kija, one on the verb and one on an NP. However, it is

7 The purposive postposition *-purru* in the PN language Walmajarri south of Kija (Hudson 1978:31) could well be a borrowing specifically from the postnominal usage of the Kija Dative enclitic pronoun *=purru*. Although this process mimics dependent-ward migration ending up as case-marking, it is not a good example since it involves borrowing.

possible to have an instrumental case-marker on an NP and a locative enclitic on the verb in the same clause, as in (19). This shows that two distinct functions are in play here.

(19) *Puj ngini-yany-ji=ngiyi marne-pa-m=pirri.*
burn he-put-he=herLOC fire-HAVING-N=INST
'He burnt (the snake) on her with a firestick.'

Miriwung has two distinct forms: one for the instrumental postposition on the one hand (*=perri*); and a third person neuter-plural locative enclitic (*=wurri*), on the other. It is likely that these were once one and the same, the *wurri* form having arisen by intervocalic lenition from **pirri* in the postvocalic environment following a verb (verbs all end in vowel-final suffixes in Miriwung). In Kajirrawung, the form of the instrumental function is covered by the locative pronominal enclitic, with expected gender agreement (F. Kofod pers. comm.).

In Miriwung, as in Kajirrawung and unlike in Kija, Locative clitics other than neuter/plural appear to function to cross-reference instruments. In example (20), the masculine Locative enclitic *=ni* cross-references the masculine noun *berraleng* 'bauhinia'. In this example, the enclitic is attached neither to the verb nor to the instrument NP but to the direct object NP which precedes the instrument. This type of placement is not possible in Kija.

(20) *Ben.gu nuwiga naw-a geranj-a=ni berraleng.*
Miriwung roast I.will.take it-TOP stone-TOP=himLOC bauhinia
'I will cook the stones with bauhinia wood.' (Kofod 1978:59)

The instrumental use of masculine and feminine Locative enclitics does not occur in Kija; to produce an instrumental reading a noun must be used in its neuter/plural form with the enclitic *=pirri,* as in (21c) below. Use of the masculine form of the word for 'water' with a masculine enclitic as in (21a) can only be read in a locative sense.[8] Example (21b) is ungrammatical because the gender of the enclitic differs from that of the noun.

(21) a. **kurlu-ny=ni* 'with water' (instrumental sense)
water-M=himLOC

b. **kurlu-ny=pirri*
water-M=itLOC

c. *kurlu-m=pirri*
water-N/P=itLOC

The obligatory association with a neuter/plural indicates a pronominal origin for the modern instrumental case postposition *=pirri.* Since that origin it has split off from the locative/instrumental/comitative pronominal enclitic *=pirri.*

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8 Compare use of the masculine dative enclitic with the masculine form of 'water' in (13) above. Why a masculine or feminine form is chosen over a neuter form involves difficult issues of specificity which cannot be discussed here (e.g. a named waterhole is usually referred to by the masculine form). However in the case of the instrumental vs locative it seems that grammatical motivations override semantics.

8 An internal push: oblique clitics cross-referencing nuclear argument NPs

There is a *prima facie* case, set out above, for the hypothesis that oblique pronominal enclitics have spread to dependent NPs in Jarragan but not in other nonPN languages.[9] The question I now turn to is why this might have occurred. In other work on diachronic change in Australian languages (e.g. McConvell 1981) I have pointed to there can be both 'push' and 'pull' factors involved. 'Push' factors would include other elements taking up positions and roles of an original element, 'crowding it out' as it were. 'Pull' factors would include similar elements to the original element occupying a different position or role and thus attracting the original element to shift into and align with this preexisting set, by analogy.

In the present case, a motivating 'push' factor could be the fact that forms almost identical to the oblique enclitics follow the verb, but with a different function, under some circumstances, e.g. in Kija:

(a) with some pronoun combinations, postverbal enclitics function to cross-reference direct objects

(22) *Tawarr yina-yit-ji=yarre.*
hit he/us-hit.PST-he=usEXCL
'He hit us.'

(b) where there is a third person singular subject and a second person object, oblique enclitics (or forms identical to them in most cases) function to cross-reference the subject:

(23) *Tawarr nemparra-yit-a=purru.*
hit they/you-hit-you=they
'They hit you (singular).'

(c) There is a category of 'middle' verbs in Jarragan languages which are formed from transitive stems, but which have a different set of prefixes which are to a large extent the same as that of intransitive verbs, and cross-reference only subject arguments, not subjects and direct objects as is usually the case with transitive verbs. The meaning of the verb may be similar to that of the transitive verb or may be quite removed from that (e.g. the middle form of 'hit' means 'be transformed into'; and of 'get', 'say'). The semantic direct object of such verbs is cross-referenced by means of an oblique LOCATIVE clitic

(24) *Wentij-pu wu-men-ji=ni jiyirri-ny.*
spear-INCH he-get-he=himLOC kangaroo-M
'He is spearing a kangaroo.'

Although almost all the postverbal enclitics cross-referencing nuclear argument NPs in all the above constructions are the same in form as oblique enclitics cross-referencing peripheral NPs,[10] they do not have the same freedom of movement. The enclitics cross-referencing

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9 Nick Evans (pers. comm.) points out that this may have occurred also in Kungarakayn, in a limited way.

10 The set of postverbal pronominal enclitics used to cross-reference direct objects and subjects in these constructions do not correspond in detail to any *one* of the sets of postverbal enclitics, but this does not invalidate the argument here that the oblique enclitic slots are being encroached on. The direct object

nuclear arguments cannot move on to the NP to which they refer, for example compare (24) with the ungrammatical (25) where the enclitic is placed after the object NP.

(25) **Wentij-pu wu-men-ji jiyirri-ny=ni.*
spear-INCH he-get-he kangaroo-M=himLOC
'He is spearing a kangaroo.'

There is only one slot for postverbal enclitics of the locative, dative and ablative variety. If more than one peripheral NP is present in the clause which could be cross-referenced by one of these enclitics, only one will be cross-referenced in this position. In Kija, the others will either not be cross-referenced at all, or the oblique pronominal enclitic which does not go on the verb will be attached instead to the NP to which it refers, if that is present, as in (26).

(26) *Pi-yarra=yayi jukpu miyal-e=purru!*
IMP-go=usINCL hunt meat-N=itDAT
'Go and hunt for some game for us!'

Thus one functional advantage of having the two positions (postverbal or HM and postnominal or DM), given the restrictions on postverbal enclisis, is the ability to cross-reference more than one peripheral NP. The existence of such constructions as the three described above (a--c), where the postverbal enclitic cross-references a nuclear argument NP, makes it more imperative for there to be an alternative position available for true semantically oblique enclitics to occupy.

Similar points can be made about the sister languages of Kija, Miriwung and Kajirrawung. These construction types in which postverbal pronominal enclitics cross-reference nuclear arguments instead of peripheral NPs under certain circumstances are common to all the Jarragan languages, and likely therefore to be quite old in the family. If they predate the hypothesised migration of postverbal enclitics on to NPs, they could have constituted a 'push' pressure favouring such migration. The frequent occupation of the postverbal slot by enclitics cross-referencing nuclear arguments would have made it functionally useful to reassign the oblique enclitics optionally to another position. The most obvious alternative position is that associated with the oblique NPs themselves i.e. dependent-ward migration. This change would have made it possible to clarify the distinct syntax and function of the oblique enclitics when acting to cross-reference peripheral NPs, and to move them into a secondary slot when the postverbal slot is already filled.

9 An internal pull: the analogy of possessive marking in NPs

Apart from the optional post-dependent placement of clausal oblique enclitics, there is another context in which pronominal enclitics are found attached to nominals rather than verbs. Locative and Dative enclitics are used to mark possession in NPs — inalienable and alienable, repectively. There are no dative or genitive case-markers in Jarragan languages.

The possessed and possessor in such NPs may occur in either order, with no resulting difference in meaning, and the enclitic is attached to the first element, whichever that

masculine singular clitic is *=ni* or *=ningi* like the equivalent locative clitic. The DO third plural enclitic on the other hand is *=purru* like the dative clitic. The feminine singular clitic is *=ngal* unlike any of the oblique clitics but resembling the feminine singular free pronoun *ngalen*. The complications here may be remnants of an old system akin to voice alternation, but this cannot be investigated here.

happens to be. Like the absence of case-marking, this is also a potential source of ambiguity which is probably mainly resolved by contextualised interpretation.

Locative (inalienable) possession:

(27) *yinginy-pe=pirri* *ngali-m*
name-N=themLOC woman-PL
'women's names'

(28) *miyal-e=pirri* *therla-m*
animal-N=itLOC back-N
'an animal's back'

Dative (alienable) possession:

(29) *jarrak-pe=nguyu* *Naangari-l*
story-N=herDAT [skin name]-F
'naangari's story'

(30) *jiyile-m=purru* *mayaru*
man-PL=themDAT house
'the men's house'

Thus head-marking and dependent-marking in the NP domain are about equally common. The dependent possessor may be omitted as in (31), leaving the head possessed nominal with the enclitic pronoun referring to the head. Nichols (1986:59–60) refers to this type of construction as a head-marking strategy for encoding possession.

(31) *Kawal* *ngurra-yit-tu* *warlu-m=ni* *ta-m.*
singe they/it-hit.PST-DU fur-N=himLOC that-N
'The two of them singed off its (wallaby's — masculine) fur.'

A possessive enclitic in the NP domain can co-occur in a clause with an oblique enclitic in the clausal domain, as in (32). This sentence also illustrates a third type of possessive construction — source-possessive — formed with the third, Ablative, set of enclitics.

(32) *Minyjuwu-m* *ta-m=nuwa* *nganyjuwarr-ji* *punkararr*
teeth-N that-N=himABL snake-M drop.out
perra-nhi=ngiyi.
they-do.PST=herLOC
'Those teeth from the snake came out of her (a woman).'

This common enclisis of oblique pronominals to nouns in the NP domain could have contributed, by a process of analogy, to the spread of dependent marking in the clause.

10 An external model? Pama-Nyungan case marking

Dependent-marking exists in languages surrounding the Jarragan languages, and the neighbouring Pama-Nyungan languages in particular. The Ngumpin languages which border Jarragan to the east and south (Ngarinyman, Malngin, Jaru) have a full array of case-marking. In historical times bilingualism involving Jarragan and Ngumpin languages has been common and there is reason to believe that such intimate contact has gone on for

hundreds, possibly thousands of years. Clearly such contact has not led to substantial convergence in the grammars of the languages, but it is an environment where one might think grammatical patterns could diffuse.

Heath (1978, 1979) has proposed that structural diffusion of grammatical patterns has gone on in Arnhem Land as well as diffusion of morphemes, including between nonPN and PN languages. Green (1995) has suggested that some grammatical features of eastern Mindi languages (nonPN) which are not generally shared with other nonPN languages and which diverge from the probable patterns in the Mindi proto-language, may have resulted from influence of Pama-Nyungan neighbours. Prominent among such features is the placement of bound pronouns on a second-position auxiliary-like element rather than on the verb. I have also argued (McConvell & Schultze-Berndt 2001) that properties of the complex verb found in nonPN languages have diffused into the Ngumpin languages, but this process is led by lexical diffusion of coverbs and is based in specific constraints arising from code-switching, rather than being diffusion of pure syntactic structures.

Care must be exercised in attributing a change to external influence unless a good case can be made with evidence from the languages in contact. In the case of the Jarragan postnominal enclitic placement, we have seen that there are language-internal push and pull factors which can be adduced for this development. Since this pattern is found throughout Jarragan it is likely to be old, and this raises questions about whether the relevant PN languages were in contact at the early period when it first developed.

Moreover the change is not really directly attributable to the influence of any specific type of grammatical pattern in the PN languages. It is a trend towards dependent-marking, but it is not case-marking in the sense in which this is found in the neighbouring PN languages. It is only in one case, that of the instrumental case in Kija, where the process has culminated in something approximating to case-marking. Here too the Kija pattern does not mirror what is found in the PN languages where the instrumental is either a secondary function of the ergative case, or in practice often a HAVING suffix with ergative marking.[11]

11 Conclusions

In this paper a counter-example to Nichols' proposal of a principle of 'headward migration' has been described. In the Jarragan languages of the East Kimberley, there has been a trend towards moving oblique pronominal enclitics from the verb (the head, in Nichols' terms) to the NP which the enclitic cross-references (the dependent, in Nichols' terms). At the stage which the process has reached, the dependent-ward move remains optional, except in the case of the instrumental where an oblique pronominal has moved permanently into postnominal position and has become in effect a case postposition.

While I cannot broaden the survey in this paper, I doubt if this is an isolated case. It does seem possible that a number of case postpositions in non-Pama-Nyungan languages could result from processes which have conveyed pronominal enclitic elements on to nominals. In Kija, for instance, the locative case suffix is different from the locative in the other Jarragan languages. It has two main allomorphs, *-n* following vowels, and *-e* following consonants. It is possible that this also descends from some pronominal enclitic form **=ni* (cf. the

[11] In Mudburra, the easternmost Ngumpin language, a separate instrumental case has developed based on the suffix which is HAVING in the other languages of the subgroup.

masculine locative enclitic today *=ni*.). The Nyul-nyulan languages in the West Kimberley also generally have locative/ergative *-ni* (Stokes 1982).

To the east, the Mindi languages also have a locative/ergative suffix *-(r)ni*, including an allomorph *-i* in some languages. In Western Mindi (Jaminjungan), *-ni* is the main allomorph of the Ergative/Instrumental and is also Locative in Ngaliwurru (Schultze-Berndt 2000:55–56; 60); in Nungali, the only language in this group which has consistent gender prefixes, case-marked prefixes are found which vary by gender e.g. Ergative masculine *nyi-*; feminine *nganyi-* (Bolt, Hoddinott & Kofod 1971:48–49; Harvey & Schultze-Berndt n.d.). In the eastern Mindi languages, Jingulu has *-(r)ni* as the locative/ergative allomorph for masculine nouns, *-nga* being used for feminine nouns (Chadwick 1975; Pensalfini 1998:273); in Wambaya *-ni* is the most general form, irrespective of gender, with *-nu, -ji* and *-yi* allomorphs, the latter found following feminine kinship nouns with the suffix *-nga* (Nordlinger 1998:82).

The variation of case marking according to gender found in Jingulu is unusual in Australia and points strongly to a pronominal origin for the 'case suffixes'; the existence of gender prefixes which vary according to case in the western Mindi language Nungali, and which appear cognate with suffixes in other languages, further supports this scenario. For eastern Mindi, Chadwick (1976:394) suggests that there was initially no ergative marking but that forms **(r)ni* (masculine) and **ngayi* (feminine) which eventually became ergative suffixes were originally independent oblique pronouns. Nordlinger (1998:82) proposes that the ergative forms were later developments from locative forms.

Putting these hints together, it would seem that these case affixes in non-Pama-Nyungan languages across a broad belt between the Barkly Tablelands and the West Kimberleys could well have originated from oblique third person pronouns, perhaps clitics. These elements might have started life enclitic to the verb or they may have had more freedom of position in the clause; what they probably have in common is a history of dependent-ward migration.[12]

Ultimately too, this issue has a great bearing on the question of the origin of the Pama-Nyungan family of languages. If Nichols's principle of headward migration were correct, it would all but rule out the kind of development of a heavily dependent-marking PN proto-language from within the matrix of a heavily head-marking phylum of languages similar to current nonPN languages. However this paper shows that at all events, the 'principle' is not an absolute universal. I suspect the opposite kind of development, as exemplified here — dependent-ward migration — is rather common. This opens the way for further research into the development of case-marking from pronominal elements, including perhaps the origins of dependent-marking in Pama-Nyungan itself.

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12 In McConvell (1996) I include dependent-ward migration as discussed here as part of a suite of historical changes which I call 'downward migration'. This also includes movement of pronominal enclitics from second position (analysed as adjunction to C) to I (auxiliary/catalyst) and V. In line with GB/Minimalism we might wish to view these changes rather as raising of I and V into C; in a similar vein, dependent-ward migration might be analysed in terms of raising of NPs to Spec-C.

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III. Daly

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4 *Phrasal verb to synthetic verb: recorded morphosyntactic change in Ngan'gityemerri*

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The verbal structure of Ngan'gityemerri[1] is characterised by the presence of two major constituents; a finite verb in combination with a coverb. Each of these constituents consists of a root to which other grammatical (and sometimes lexical) morphemes are affixed. The entire verbal structure is a polysynthetic complex with the fixed constituent ordering of finite verb–coverb, though a few subsets of verbs have the inverse but fixed ordering, coverb–finite verb. Intriguingly, the same subsets of verbs have variant ordering patterns in other Southern and Western Daly languages. Purely synchronic data provide little explanation for this variation. However, for Ngan'gityemerri the recent and serendipitous discovery of Gerhardt Laves' 1930 work, allows us a diachronic viewpoint on the structural change that has taken place in this language. This paper compares the verbal structure of contemporary Ngan'gityemerri with that recorded by Laves in 1930, and that recorded by Tryon in the mid 1960s and Hoddinott and Kofod in the late 1960s to mid 1970s. With these three windows on the development of the Ngan'gityemerri verb, it is possible to clearly show it to have developed from a phrasal verb structure into a polysynthetic word complex. Opportunities to observe recorded rather than reconstructed morphosyntactic change are rare in the case of Australian languages. The changes that have taken place in Ngan'gityemerri have been surprisingly rapid but, intriguingly, not in the direction that contact with English might suggest.

1 Ngan'gityemerri is a non-Pama-Nyungan language spoken by about 150 people principally in the communities of Nauiyu Nambiyu and Peppimenarti in the Daly River region of Australia's Northern Territory. This paper has had a long gestation period and evolved through some quite different drafts. For comments and criticisms along the way I express my sincere thanks to Nicholas Evans, Ian Green, Mark Harvey, Jeffrey Heath, Bill McGregor and David Nash. Responsibility for the content, though, lies with me alone.

Nicholas Evans, ed. *The non-Pama-Nyungan languages of northern Australia: comparative studies of the continent's most linguistically complex region*, 95–123.
Canberra: Pacific Linguistics, 2003.

1 The two-part verb

Before turning to the verbal structure of Ngan'gityemerri specifically, some general observations about this type of verbal structure as an areal feature are in order. Tryon's (1974) classification of the Daly languages is done in terms of the lexico-statistical method that classifies languages having 16%–25% of cognates as groups of the same phylic family; 26%–50% as subgroups of the same group; 51%–70% as languages of the same subgroup; and over 71% as dialects of the same language, following Wurm (1972).

While the classification is primarily lexical (based on the cognate density revealed by a 200-item comparative word list), the higher level groupings rely on the use of two additional criteria, the comparison of finite verb classes, and verbal structure (Tryon 1974:xii).

> It is this, *(the feature of two verbal elements, a finite verb and a coverb within a complex verb)* then, in addition to the almost identical verb class categories throughout the Family, which is most characteristic and distinctive, and it is this which most clearly distinguishes the Daly Family from surrounding linguistic neighbours. (Tryon 1974:304; bracketed italicised elements mine)

In passing, Tryon's additional use of 'verb class categories' (i.e. finite verbs) as a secondary tool in distinguishing the 'Daly Family' languages from their neighbours should have provided clear grounds for the co-classification of Ngan'gityemerri and Murrinh Patha, for they share highly similar finite verb systems with respect to finite verb number and finite verb semantics, not to mention shared suppletive finite verb forms. Murrinh Patha, the immediate neighbour to the west of Ngen'giwumirri, shares with Ngan'gityemerri not only the near-identical finite verb system noted above, but also similar finite verb + coverb structure. Indeed Murrinh Patha has recently been shown (I. Green this volume) to be the language most closely related to Ngan'gityemerri.

Setting aside systems of finite verb, and focusing instead on the type of verb structure characterised by two verbal elements, it is clear that these are found in languages over a far wider area than Tryon envisaged.

The languages south of the Daly share verbal systems characterised by this two-part structure. The Yirram languages, Jaminjung, Nungali and Ngaliwurru, also have verbs comprised of an uninflecting root in combination with a small closed class of inflecting verbs with similar stance/posture/motion semantics (Cleverly 1968; Bolt, Hoddinott & Kofod 1971; and Schultze-Berndt 2000). Within the same family as the Yirram languages, the Barkly languages Jingili, Ngan.ga, Binbin.ga, Wambaya and Gudanji retain an essentially two-part verbal structure despite having undergone radical typological restructuring that has led them to abandon prefixing morphology in favour of suffixing (Green 1995; Nordlinger 1998; Chadwick 1975, 1997).

To the east of the Daly region, languages like Wagiman (Cook 1987), Wardaman, and Mangarrayi (Merlan 1994, 1982) and Alawa (Sharpe 1972) also have verbal systems involving a finite verb combining with a coverb. Verbal systems of this type are likewise found in languages extending to the southwest of the Joseph Bonaparte Gulf, like the Jarrakan languages Miriwoong and Gajerrawoong (Kofod, pers. comm.), and languages extending westwards into the Kimberleys such as Bunaba (Rumsey 2000), Gooniyandi (McGregor 1990), Nyulnyul (McGregor pers. comm.), Warrwa (McGregor 1994), Nyikina (Stokes 1982), Yawuru (Hosokawa 1991), and Worrorra (Capell & Coate 1984; Silverstein 1986). It would be misleading to imply either that this listing is exhaustive, or that all these languages have verbal structure identical to that found in the southern and western Daly

languages. What they do share, though, is a verbal system combining some kind of uninflecting coverb with a finite verb that contributes something to the semantics of the complex verb. In short there is nothing about this verb structural type that is uniquely distinctive of those languages that Tryon chose to include in his 'Daly Family'. While no Daly area languages lack this as a dominant construction, the construction type itself is found in numerous non-Daly languages. Indeed some Pama-Nyungan languages, like Warlpiri, have verbal structures in which similar phenomena can be found.

Admittedly, these similarities are slightly masked by a variety of terminological conventions; 'preverbs and generic verbs' (Schultze-Berndt 2000, which contains a good discussion of terminological choices in typological perspective), 'verbals and classifiers' (McGregor 1990), 'auxiliary and verb root' (Reid 1982, 1990). Other labels for coverbs include 'verbal particle' (Merlan 1982), 'gerund' (Capell 1976), 'participle' (Cook 1988). In this paper I will use the labels 'finite verb' and 'coverb'. To facilitate comparison of the function of these constituents across a range of languages, we need to be clear about their word-class status and what they contribute to the meaning of the complex verbal word.

Coverbs are an open class of typically uninflecting roots. Several hundred coverbs can usually be identified, and the class is typically open in the sense that additions to the class come about through some derived use of adjectives and nouns as coverbs; through the combination of finite verbs with English/Kriol coverbs; and through, usually limited, morphological derivation (often marking location), etc. Although generally uninflecting, coverbs in some languages exhibit some limited capacity to be roots. For example, in Bunuba, coverbs can host aspectual and directional suffixes. Additionally, they can be phonotactically distinct from nominal roots, often being (closed) monosyllabic and allowing initial consonants not found in other word classes.

Finite verbs are a small closed class of bound inflecting verbs. They typically inflect for TAM categories and index the person/number categories of core participant roles. The indexing of gender categories is usually restricted to third singular pronominals, and there may be some interaction between person/number categories and other grammaticised categories such as kinship in Murrin-patha (Walsh 1976). The number of finite verbs within such systems varies considerably. At the lower end we find as few as eight in MalakMalak (Birk 1976), while at the higher end there are about thirty-five in Murrinh Patha (Walsh 1976).

Critically, finite verbs contribute to the semantics of the resultant complex verb in some way. The semantics of finite verbs in the languages listed above vary too widely to be easily characterised. The following list is thus not intended as a recipe for such a system, but merely to give readers unfamiliar with these languages an indication of the finite verb semantics that they might expect to find. The semantics of a typical Daly language finite verb system may then include;

- posture/stance: *sit, lie, stand, be*
- movement: *go, bring, carry, throw*
- contact type: *flat/edge, compact/blunt, sharp/poke*, etc.
- manipulation: *with hands, with feet, with mouth*, etc.
- contact: *hit, touch*
- consumption: *burn, ingest*

- *say/do(/think)*
- *see*
- *reciprocal/reflexive* activity can also be coded through finite verb choice (e.g. Murrinh Patha, Ngan'gityemerri, Gooniyandi)

As a general observation, for those languages with larger finite verb systems, such as the southern Daly languages, finite verb semantics tend to be more transparent and lexical, whereas for those languages with smaller finite verb systems, such as the eastern Daly languages and the Kimberley languages, finite verb semantics tend to be more difficult to specify, often involving more generalised semantic categorisations and vaguer distinctions in aspect and transitivity (see for example McGregor's (1990:557–572) discussion of 'extendible classifiers' and 'accomplishment classifiers' in Gooniyandi, and Knight's (1999) treatment of Bunuba finite verbs).

While finite verbs contribute to the semantics of the whole verb complex in terms of the kinds of meanings listed here, and can usefully be thought of as having a classificatory function, they do not provide a basis for the division of coverbs into disjoint classes. That is, the class of coverbs cannot be divided up into subclasses according to their finite verb combination. Across a finite verb system there is typically wide variation in the degrees of productivity and semantic transparentness that individual finite verbs display. While some coverbs will occur in combination with only a single finite verb, more typically there will be coverbs which combine with a number of different finite verbs. In Ngan'gityemerri, for example, the coverb *man* 'crawl' combines only with the *Go* finite verb, whereas the coverb *ket* 'detach' has been recorded in combination with the *Sit*, *Hands*, *Mouth*, *Poke*, *Slash*, *Shove*, *Bash* and *Feet* finite verbs, as demonstrated below.

Go	+	*man*	'crawl'
Sit	+	*ket*	'be bogged'
Hands	+	*ket*	'pick (e.g. fruit)'
Mouth	+	*ket*	'stop someone talking'
Poke	+	*ket*	'feel for turtles in mud with a stick'
Slash	+	*ket*	'slice with a knife'
Shove	+	*ket*	'bog a car'
Bash	+	*ket*	'pass someone going the opposite way'
Feet	+	*ket*	'break something with your foot'

Also, some finite verbs will be highly productive and combine with hundreds of different coverbs, while others will be relatively unproductive. In Ngan'gityemerri, for example, the *Hands* finite verb has been recorded with over three hundred different coverbs, whereas the *See* finite verb has only ever been recorded with about six (Reid 1990).

Some finite verbs (typically the stance/posture/motion ones) can function independently, without a coverb, with a clear meaning (often referred to as 'simple verbs').[2] In combination with coverbs, some finite verbs that can occur as simple verbs will retain a highly specific meaning, others will undergo some degree of semantic bleaching — the stance/posture/

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2 Gooniyandi (McGregor 1990) and Ngarinjin (Rumsey 1982), in addition to a smallish class of classifying finite verbs (about ten), have large classes of simple verbs, i.e. finite verbs that stand independently of coverbs.

motion finite verbs for example are often leached of their semantics and contrasted for aspectual distinctions. A more detailed typology of finite verbs in the Southern Daly languages Murrinh Patha and Ngan'gityemerri can be found in I. Green (this volume).

2 Ngan'gityemerri: 1930–1960–1980

This section tracks diachronic morphosyntactic change in the verbal structure of Ngan'gityemerri over the fifty years from 1930 to 1980, by contrasting the data available from three synchronic studies. First, we'll look at the contemporary Ngen'giwumirri verb structure, noting those features of it that are typical of Daly languages. Second, we will examine the findings of D. Tryon and W. Hoddinott and F. Kofod, who collected a lot of data on Ngan'gikurunggurr and Ngen'giwumirri in the late 1960s and early 1970s. Third, we'll then contrast these findings with data on Ngen'gimerri (another dialect of Ngan'gityemerri no longer spoken) collected in 1931 by Gerhardt Laves. In particular, we will concentrate on three aspects of verbal structure: constituent ordering, the possibilities for the independent occurrence of coverbs, and coverb constituency.

2.1 Contemporary Ngan'gityemerri

2.1.1 Constituent ordering

Ngen'giwumirri, Ngan'gikurunggurr and Ngen'gimerri are three closely related dialects of a language referred to as Ngan'gityemerri (Reid 1990). Ngan'gityemerri has a polysynthetic verbal structure that is primarily agglutinative, but partially fusional. Within the complex verb three functional units can be identified: a finite verb, a coverb and an enclitic group. These three units occur in a fixed order and together constitute a single phonological word. The morphemic constituency of these units is set out in Figure 1, below.

Sub+Root+Obj = Applic+Applic+Div+BodyPart+Root = Direc+Sub+Foc+Tense		
FINITE VERB	COVERB	ENCLITIC GROUP

Figure 1

As this diagram suggests, the Ngan'gityemerri verb can include as many as thirteen morphemes, though after the finite verb only the coverb and tense marker are obligatory. The fused part of the Ngan'gityemerri verb complex is the finite verb unit. Although the constituent morphemes of the finite verb are readily reconstructable (see I. Green, this volume) segmentation between them is not always synchronically practical.

To demonstrate these three units of the verb, consider the two Ngen'giwumirri examples given below. The first is quite complex, having a multimorphemic coverb and a dimorphemic enclitic unit. The second is a simpler example, having a coverb that consists simply of a coverb, and an enclitic group that consists simply of a tense enclitic. I use the symbol = in these examples to mark the boundaries between the finite verb, coverb and enclitic units, and simple hyphens between the constituent morphemes of these units.

(1)[3] *Wári-ngi=fi-mi-tyerr-tit=nyine-pe.*
3sgS.Poke.IR-1sgO=CAUS-APPLIC-mouth-raise=FOC-Fut
'He's about to teach it to me now.'

(2) *Ngini=fifi=tye.*
1sgS.Sit.PI=smoke=Past
'I was smoking.'

As among all the Daly languages, a small subset of finite verbs can stand with enclitics, but in the absence of a coverb, as full independent verbs. In Ngan'gityemerri it is the low transitive posture/motion finite verbs *Sit, Lie, Stand* and *Go* that can function in this capacity (contrast (3) below with (2) above), but there are a few high transitive finite verbs like *See* and *Take* (the latter demonstrated in (4) below), that can stand alone as full verbs.

(3) *Ngini=tye.*
1sgS.Sit.IMP=Past
'I was sitting.'

(4) *Yawam=ngi!*
2sgS.Take.IR=1sgO
'Take me!'

However, most high transitive finite verbs are found only in combination with a coverb.

While no free variation in the respective ordering of the finite verb and the coverb is permitted, there are three subclasses of verbs in contemporary Ngan'gityemerri that reverse the normal finiteverb=coverb=enclitic order, and instead require the ordering coverb=finiteverb=enclitic. The subclasses are (i) the verb 'to want', e.g. (5); (ii) all verbs employing the 'Say/Do' finite verb, e.g. (6); and (iii) a few verbs employing the 'Go' finite verb, e.g. (7).

(5) *Derrigidi=ngerim-Ø=Ø.*
want=1sgS.Hands.PR-3sgO=PR
'I want it.'

(6) *Ngirrkik=meyi=tye.*
breathe=3sgS.Do.PI=Past
'He was breathing.'

(7) *Misi=yani=pe.*
die=3sgS.Go.IR=Fut
'He's going to die.'

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[3] Example glosses employ the following abbreviations: 1sgS - first person singular subject, etc.; 2plO - second person plural object, etc.; 3dlexG - third person dual exclusive goal, etc.; APPLIC - applicative; inc - inclusive; ex - exclusive; S - subject; O - object; G - goal; PR - present; PF - perfective; PI - past imperfective; IR - irrealis; Fut - future tense enclitic; Pres - present tense enclitic; Past - past tense enclitic; DIV - divisive prefix; BOD – body part prefix; CAUS - Causative prefix; FOC - focus marker; SEMB - semblative; HITH - hither; THITH - thither. Each of the 31 finite verbs are given a semantically based label, e.g. *Sit, Lie, Go, Do, Hands, Poke.*

2.1.2 Independent occurrence of coverbs

There is a constraint in contemporary Ngan'gityemerri on the independent occurrence of coverbs. In general coverbs are fully dependent on the presence of a finite verb and cannot occur in the absence of finite verbal morphology. A single exception is to be found in the minor and highly restricted occurrence of coverbs as imperatives. Only the following six coverbs have been recorded in isolation in this construction type.

(8)
(*yani-*)	*wap!*	–	sit!
(*yani-*)	*karrbu!*	–	get down!
(*yani-*)	*pat!*	–	get up!
(*yani-*)	*puy!*	–	keep going!
(*yani-*)	*tyerr!*	–	stop!
(*yani-*)	*pap!*	–	climb up!

However these are demonstrably reductions of a full imperative construction, with a deleted finite verb *yani* (second person singular subject, Irrealis finite verb *Go*). Otherwise coverbs have no independent status or options for occurrence as free forms.

2.1.3 Coverb constituency

Turning our attention to coverb constituency in contemporary Ngan'gityemerri, what reasons can be adduced in support of the claim that applicative, divisive and body-part morphemes form some sort of unit together with the coverb?

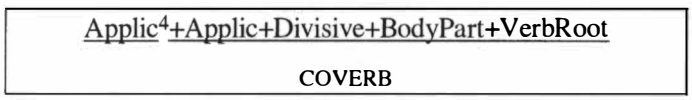

Figure 2

Some evidence comes from the productive combinatorial possibilities that hold between finite verbs and coverbs. Thus we can take a coverb consisting of 'divisive – bodypart – coverb' and productively recombine that complex coverb with several different finite verbs, as in (9)–(11) below.

(9) *Nginem=gen-ge-ket.*
1sgS.Heat.PR=DIV-belly-cut
'I cut it in half (with a fire stick).'

---

4 Applicatives in Ngan'gityemerri are two constituents of the coverb which appear to have arisen through similiar processes that spawned the incorporation of object/location body-part nouns within the verb; however, they are essentially non-productive in the contemporary language. The morpheme *-fi-*, possibly deriving from *pi* 'head', generally now derives causative coverbs, and *-mi-*, derived from *muy* 'eye', functions increasingly as a 'presentive' applicative (to do something in the presence of someone, e.g. 'I pulled out some tobacco *in your sight*' or 'I pulled up *in front of you — where you could see me*'). These derivational forms are discussed in more detail in Reid (2000).

(10) *Ngebem=gen-ge-ket.*
1sgS.Bash.PR=DIV-belly-cut
'I chopped it in half (with an axe).'

(11) *Ngupun=gen-ge-ket.*
1sgS.Slash.PR=DIV-belly-cut
'I sliced it in half (with a knife).'

Secondly, we find that the complex coverb forms a unit that stress-marking rules are sensitive to. In Ngan'gityemerri primary stress falls on the first syllable of the finite verb unit, and secondary stress falls on the first syllable of the coverb, regardless of their internal constituency (i.e. whether the coverb consists simply of a coverb, or of a coverb plus any combination of applicative, divisive or body-part morphemes). Thus while stress marking on nominals is syllable-timed in Ngan'gityemerri, it is possible for primary and secondary stress marking on complex verbs to occur on contiguous syllables, or separated by up to five syllables, as demonstrated in (12)–(16) below.

(12) *Ngá=pàwal=pe.*
1sgS.Poke.IR=spear=Fut
'I'll spear it.'

(13) *Ngárin-nyi=pàwal=Ø.*
1sgS.Poke.PF-2sgO=spear=Pres
'I speared you.'

(14) *Wúdum-ngirrki=pà=Ø.*
3sgS.Shove.PF-1dlexG=smile=Pres
'She smiled at us two.'

(15) *Wúdumbun-ngiti=fìtyi=Ø* *peke.*
3sgS.Shove.PF-1sgG=roll=Pres tobacco
'He rolled me a cigarette.'

(16) *Wári-ngi=fì-mi-tyerr-tit=nyine-pe.*
3sgS.Poke.IR-1sgO=CAUS-APPLIC-mouth-raise=FOC-Fut
'He's about to teach it to me now.'

Looking just at this synchronic data it is not obvious what would motivate the existence of a word-internal boundary at this point, for the purpose of stress assignment. However, an explanation for this pattern arises naturally from the direction of morphosyntactic change argued for in this paper, so we'll return to this issue in §2.3. For now, the main point is that in contemporary Ngan'gityemerri patterns of finite verb and coverb combination, and secondary stress assignment rules, both give us grounds to identify the coverb as some kind of unit.

However, there is also some apparent counter-evidence for such coverb constituency. In §2.1.1 above we noted that all verbs in contemporary Ngan'gityemerri formed with the *Say/Do* finite verb have their coverb ordered before the finite verb. This structural type is demonstrated in Figure 3 below, and exemplified in examples (17)–(20).

Root =	Sub+Root+Obj+BodyPart	Direc+Sub+Foc+Tense
COVERB	FINITE VERB	ENCLITIC GROUP

Figure 3

Note that these verbs share several structural characteristics;

- the coverbs consist of a monomorphemic root only, no examples have causative or other prefixes.
- incorporated body-part morphemes occur in the postfinite verb position.

Both these characteristics suggest that these verbs do not have the kind of coverb constituency demonstrated in Figures 1 and 2. The occurrence of bodypart morphemes to the right of the finite verb raises questions about the juncture between finite verb and body-part morpheme. While this will not be pursued in detail here, because tense enclitics fall to the right of such body-part terms, as demonstrated in (20) below, I'm assuming body-part morphemes to be affixes to the finite verb, and represent this juncture in examples (17)--(20) with a simple hyphen.

(17) *Tyip=ngiminy-bi-tyeri.*
dark =1sgS.Do.PF-2sgG-ear
'I forgot about you.'

(18) *Palak=ngiminy-muy.*
blink=1sgS.Do.PF-eye
'I winked.'

(19) *Bul=ngimin-ge.*
anger=1sgS.Do.PF-belly
'I'm angry.'

(20) *Buy=ngimi-pi-pe.*
light=1sgS.Do.IRR-head-Fut
'I'll go greyhaired.'

Examples such as these do not weaken the analysis of coverb constituency argued for here. In §2.3 it will become apparent that these *Say/Do* verbs are relics of an earlier verbal structural pattern, and have not undergone the changes that have led to the coverb constituency found in the contemporary Ngan'gityemerri verb.

2.2 Ngan'gityemerri in the 1960s and 1970s

Both Tryon (1974) and Hoddinott and Kofod (1989), who worked in the late 1960s and early 1970s, reported some minor variation in the ordering of the coverb and finite verb in Ngan'gikurunggurr (bracketed italicised elements mine):

> ... the verb stem *(coverb)* may either immediately follow the affix unit *(finite verb)* ... ngi-ni-lalirr-tye[5] "I ate while in a sitting position", or may sometimes precede the affix unit, as in a sentence such as lalirr ngi-ni-tye, which has exactly the same meaning as the previous example. (Tryon 1974:238)
>
> This (*coverb*) normally follows the auxiliary verb *(finite verb)* but in some cases (determined by convention) may precede it and in a few other cases both precede and follow it. (Hoddinott & Kofod 1989:87)
>
> Verb stems *(coverbs)* usually follow, but sometimes precede, the auxiliary *(finite verb).* (Hoddinott & Kofod 1989:199)

Tryon does not make explicit claims about whether these complex verbs are made up of one or more words. Note however that he uses hyphens between all elements in his example representing the ordering finite verb–coverb, but appears to represent the coverb as a separate word, without a hyphen, when the coverb precedes the finite verb. His belief that the pre-positioned coverb is a separate word is further confirmed by his observation about the ability of the coverb to host tense enclitics (bracketed italicised elements mine):

> ...the position of the tense auxiliaries *(enclitics)* (tye past, ngini future) is flexible. They may be suffixed to the affix unit *(finite verb)* itself ... or they may be attached to the verb stems *(coverbs)* when they precede the affix unit. (Tryon 1974:238)

Hoddinott and Kofod's representations of verbs are just too varied to know whether they interpret complex verbs as one or two words.

While each of these authors claimed that the variation is 'free' in the sense that it carries no change in meaning, both made some attempt to further chase down some conditioning factor. Tryon suggested that Ngan'gikurunggurr may have used the finite verb–coverb ordering for past and future tenses, but coverb–finite verb for present tense (Tryon 1976:686), though this would appear to be at odds with the data given in the quote above. Hoddinott and Kofod further observed that finite verb–coverb ordering appeared to be less fixed in Ngen'giwumirri than in Ngan'gikurunggurr. I return to this interesting observation in §3.

2.3 Ngen'gimerri of 1930

Before detailing the verbal structure, I will offer a few comments concerning the status of Ngen'gimerri and how it came to be recorded as early as 1930.

2.3.1 Ngen'gimerri and Gerhardt Laves

Ngen'gimerri is the name given to a speech variety that until fairly recently[6] was spoken by the northeastern-most Ngan'gityemerri-speaking clan, rak-Merren (the language variety is

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5 *Ngi-ni-lalirr-tye.*
1sgS-Sit.Pl-eat-Past
I was eating.

6 The last active speaker of Ngen'gimerri died in the 1950s. Since his death, his descendants have 'followed up their mother's side', claiming their primary linguistic and land affiliation with the Ngen'giwumirri estate of rak-Lafuganying on the west bank of the Fish River. At the time of writing, no-one around the Daly region claims to be Ngen'gimerri anymore.

also known as Ngan'gimerren). Stanner (1933) makes a brief mention of the name, and probably on the basis of this reference, it was included in Capell's (1963) survey. Tindale also appears to have included it in his map, but misplaced it far to the southeast of Wagiman (Tindale 1974). Tryon discounts the existence of Ngen'gimerri as a separate entity, assuming that this is just a variant name for Ngen'giwumirri:

> In the Capell survey (1963) Ngengomeri is allocated the identification no. N64. In the same survey Capell also mentions a language called Nangimerri, to which he assigns the identification no. N65. In fact the two are one and the same language, the two names being simply variants. (Tryon 1974:251)

However the evidence for Ngen'gimerri as a third dialect of Ngan'gityemerri is quite conclusive. First and foremost, it is identified and named by contemporary Ngan'gityemerri speakers. Secondly, despite being spoken by only the clan members of a single small estate, it is remarkably well documented.

Between 1929 and 1931 Gerhardt Laves carried out linguistic and anthropological fieldwork in Australia under the auspices of the Australian National Research Council. A student of Edward Sapir's, he was sent to Australia to study Aboriginal languages, following A.R. Radcliffe-Brown's invitation to Sapir to do the same. During his two years in Australia (August 1929 to August 1931) he travelled widely, collecting data in most mainland states. After working on Gumbaynggir, Karajarri, Bardi, and Goreng, Laves travelled to the Daly region where he worked on Ngen'gimerri and Matngele.[7] On his return to the USA in 1931 Laves continued linguistic studies for a few years, though he switched his focus to American Indian languages. By the time of World War II, he had made a career with the International Harvester Company, and never worked further as a linguist or anthropologist, though according to Nash (1993) he remained in contact with anthropologists at the University of Chicago until his death in March 1993. Laves published only two minor notes about his Aboriginal studies. His original fieldnotes were tracked down by Michael Walsh and Mark Francillion in 1982–83 and copies of these were deposited in the AIATSIS Library in 1985.

Laves' Ngen'gimerri data, consisting of elicitation notes, vocabulary cards, and about 130 pages of annotated but mostly unglossed and untranslated text, is very impressive. Obviously well trained in phonetics, Laves had no difficulty in hearing the rhotic contrast, initial velar nasals, geminate stops etc. Less competent with the rather complex phonology, he had trouble perceiving the nature of the stop contrast[8] and was confused by certain phonological rules. Most impressive is his incisive understanding of the complex verbal morphology, particularly the finite verb inflectional system. Laves is careful to name his informants (King and Nipper), and these are recognised by Ngan'gityemerri speakers as the names of Ngen'gimerri men who died in the 1940s and 1950s.

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7 He named this language 'Emdil' presumably from an Aboriginal pronunciation of 'Hermit Hill', the site of one of the Jesuit Missions on the western side of the middle Daly.

8 This contrast has caused considerable difficulties for all who have worked on this language, principally because the parameters underlying the contrast shift from glottal timing to manner of articulation across the place of articulation categories. It took the author several years to figure this out. Laves spent probably no more than a few months working on Ngen'gimerri, so this failure does not diminish my admiration for the detail and accuracy of his work.

2.3.2 Ngen'gimerri as recorded by Gerhardt Laves

Examination of Laves' corpus reveals several striking features of verbal structure. Firstly, there is wide variation in the ordering of the coverb in relation to the finite verb, and evidence that they constituted two phonological words. A text count of all the verbs in Laves' texts reveals that about twenty-five per cent of tokens have the ordering;

coverb = finite verb = enclitics

and in his elicited fieldnotes the proportion is much higher, about 65%. The examples set out below have been specifically chosen to demonstrate this ordering, and should therefore be understood to not reflect these percentages. In the line immediately below each example taken from Laves' texts[9] I have included the glossed contemporary Ngen'giwumirri equivalent.

(21) Du yeninj, pard deminj.
Yeniny-du *deminy-pat.*
3sgS.Go.PF-sleep 3sgS.Hands.PF-rise
'He slept then he got up.'

(22) Wadad yunin, wadad wum, lalirr wirringgu.
Yu-nin-watat, *wum-watat,* *wirriny-gu-lalirr.*
2sgS.Slash.IR-1dlincG-hook 3sgS.Slash.PF-hook 3plS.Sit.PF-dlS-eat
'You hook it off (the fire) for us!', he hooked it off, and they (dl) ate it.'

(23) Dudu dam, dam dudu, kinji dinj parl.
Dam-dudu *dam-dudu* *kinyi* *diny-pal,*
3sgS.Poke.PF-track 3sgS.Poke.PF-track here 3sgS.Sit.PF-camp
'He tracked it, he tracked it along here (to where) it made camp,

Bard deminj, du yeninj, bard deminj.
deminy-pat *yeniny-du* *deminy-pat.*
3sgS.Hands.PF-arise 3sgS.Go.PF-sleep 3sgS.Hands.PF-rise
'got up, slept again, and got up again.'

Note the varied orderings of the finite verb and the lexical root in the verb 'to track' in example (23).

In addition to variation in constituent ordering, the lack of bonding between the coverb and the rest of the verb is manifest in several other ways. Firstly, compared to modern Ngan'gityemerri, coverbs show a greater capacity to function as free forms without any co-occurring finite verb. Recall that in contemporary Ngan'gityemerri this type of independent occurrence is only found for a small number of coverbs in imperative constructions. With this in mind consider Laves' examples given below.

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9 The only changes I have made to Laves remarkably modern looking orthography are the substitution of e for his *ɛ* and *ng* for his *ŋ*. Laves' use of ‹rd› and ‹rl› to represent retroflex stop and lateral are an example of his (fortunate) tendency to over-phonemicise when in doubt. There is no apical contrast operating in Ngan'gityemerri, although there are retroflex allophones in certain positions (see Reid 1990 for details).

(24) Debi yeninj parl debi yeyi

De-bi *yeniny-pal* *de-bi* *yeyi,*
BOD-thigh 3sgS.Go.PF-break BOD-thigh other
'One of its legs was broken, the other leg,

yeyi **parl** daba yeyi **parl**
yeyi *yeniny-pal,* *da-ba* *yeyi* *yeniny-pal.*
other 3sgS.Go.PF-break BOD-arm other 3sgS.Go.PF-break
'the other one was broken, one of its arms was broken too.'

(25) tip deme **daidj**[10] dabi **parl**

Deme-tip *deme-waty* *de-pi* *deme-pal,*
3sgS.Hands.PF-grab 3sgS.Go.PF-twist BOD-head 3sgS.Hands.PF-break
'The ghost seized it, twisted it, broke it's head,

Wurru wudem yerdirri -nide anguitj.
wudeny-wurr *de-yedirr-nide* *anguty.*
3sgS.ShoveSelf.PF-insert BOD-hip-LOC ghost
'and stuck it in his hip (hairbelt).'

Although in these examples the coverbs *parl* 'break' and *daidj* 'twist' appear as free forms, this 'independent' occurrence of the coverb is clearly not unconstrained. From these and other examples it is apparent that this capacity of coverbs to stand independently is sanctioned only where they occur within a string of verbs understood within the discourse referencing structure to share certain information. In (24) the coverb *parl* occurs on its own twice, though both follow an occurence of the full finite verb + coverb *yeninj parl*. This then is clearly finite verb deletion where the same verb is repeated. In (25) we find *parl* occurring on its own, following the different verbs *deme-tip* 'seize' and *(deme)-waty* 'twist'. Significantly, though, all of these three verbs share not only the same finite verb (actions performed holding some object within the grasp of your hands), but also identical subject person/number and TAM coding.

So these free form coverbs can be seen to result from finite verb deletion rather than being truly independent coverbs. Nevertheless, it must be noted that, apart from imperatives, the deletion of even contextually recoverable finite verbs is no longer possible in contemporary Ngen'giwumirri. Note though that contemporary MalakMalak (Harvey pers. comm.) permits finite verb deletion under the same sort of constraints — within a string of serialised verbs sharing the same subject/tense information.

The second striking feature of Laves' Ngen'gimerri texts is the positioning of applicative, divisive and body-part morphemes. Verbal constructions in Laves' Ngen'gimerri data,

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10 The correspondence between Laves' 'daidj' and contemporary *waty* is unclear. Coverbs that begin with w in contemporary Ngan'gityemerri tend to undergo some phonological changes, most typically *w-* > *m* after *m*, thus underlying 'dem-wurity' becomes surface *dem-murity*, etc. However, no known phonological processes provide a good motivation for the apparent *d-* > *w* found here.

Note that there are two possible analyses of the first three words in example (25). Either it is underlyingly 'deme-tip deme-daidj' with with deletion of the first finite verb 'deme', or underlyingly the first verb is 'tip-deme' with the ordering of coverb before finite verb. In this scenario (which the bolding suggests) it would be the second coverb *daidj* that stands independently of a finite verb in surface form.

involving both coverbs preceding the finite verb and incorporated body-part morphemes, have the body-part morpheme in the postfinite verb position, as in (26) and (27) below.

(26) lid beyinpi waninggi, du yeninj
Beyin =pi -lit *wa-ninggi* *yeniny=du.*
3sgS.Bash.PF=head-cover paperbark-INSTR 3sgS.Go.PF=sleep
'He covered himself with paperbark and went to sleep.'

(27) tu wurrmudjirri dege
Wurrmu=tyirri-tu *de-ge.*
3plS.Slash.IR=navel-cut BOD-belly
'They'll cut its guts open.'

Similarly, applicative and divisive morphemes in Laves' Ngen'gimerri data, also occur in the postfinite verb position, as in (28)–(30) below.

(28) miyi djuq damnefi
Miyi *dam-ne=fi-tyuk.*
food 3sgS.Poke.PF-3sgG=CAUS-place
'He put down food for him.'

(29) wurl ngudumuipe
Ngudu=mi-wul=pe.
1sgS.Shove.IR=APPLIC-return=Fut
'I'll take it back.'

(30) bi ninggi gerrgerr wurrbumgenge
Bi-ninggi *wurrbum=gen-ge-gerrgirr.*
axe-INSTR 3plS.Bash.PF=half-belly-cut
'They chopped it in half with an axe.'

Intriguingly there are no examples in Laves' data where applicative, divisive and body-part morphemes appear in the postfinite verb position, and at the same time the coverb does not appear before the finite verb. It thus seems that in 1930s Ngen'gimerri, coverbs were free to variously appear before or after the finite verb. However this freedom was constrained by the fact that any enclitics attached to the finite verb and enclitics had to be the final element of the verbal complex. Thus coverbs were obligatorily positioned before the finite verb whenever the finite verb bore either applicative, divisive, body-part or overt tense marking. And it is only in the absence of such enclitic morphology that we encounter the optional repositioning of the coverb to the right of the finite verb, as in example (23).

3 Summary of changes in the Ngan'gityemerri verb

This section provides a summary of the changes evident through these three synchronic windows on Ngan'gityemerri verb structure, and uses them to conjecture about the diachronic process of morphosyntactic restructuring. This discussion is essentially pan-dialectal, assuming that Ngen'gimerri of 1930 was not significantly different from Ngen'giwumirri (or even Ngan'gikurunggurr) of the same time, i.e. Laves' description of 1930s Ngen'gimerri is assumed to be an equally good description of 1930s Ngen'giwumirri. While it is the general

direction of morphosyntactic restructuring, from a phrasal verb to the more tightly glomped synthetic verb, that I am primarily concerned with here, rather than the comparative timing of this change in particular dialects, this assumption is crucial to the claims made in this paper, so the basis on which it is made deserves some comment.

Firstly, Laves makes a single comment on the relationship between Ngen'gimerri and Moyel; 'close to Moyel, slight variations, almost purely phonetic'. By 'Moyel' (from Ngen'giwumirri and Ngan'gikurunggurr *muyil* 'swamp'), he probably meant either just Ngan'gikurunggurr, or both Ngan'gikurunggurr and Ngen'giwumirri.[11] Laves does not mention Ngen'giwumirri explicitly, but given the overall high quality of his data it is difficult to believe that he did not understand it to be different from Ngen'gimerri. As Laves' fieldnotes include no data on 'Moyel', we can not be sure that his reference to the difference between it and Ngen'gimerri being 'purely phonetic' is anything more than impressionistic.

The parallel development of Ngen'gimerri and Ngen'giwumirri is further suggested by anecdotal evidence from contemporary Ngen'giwumirri speakers. Taking Laves' texts with me to Nauiyu Nambiyu and Peppimenarti in 1988, I read them to Ngen'giwumirri people expecting them to be as surprised as I was at the back-to-front verbal structure. While they showed keen interest in the content of the texts, and reminisced about Laves' informants, the structural features of the language elicited not an iota of interest. When I explicitly drew Ngen'giwumirri speakers' attention to the inverse ordering of particular verbs, they seemed nonplussed. When I suggested that this differed from the way they spoke Ngen'giwumirri, in a classic example of the disparity that can exist between people's perception of their language use on the one hand, and their actual use of it on the other, they insisted that this inverse ordering was still normal. Now, in my work on Ngen'giwumirri since 1982, in hundreds of hours of collected texts, and thousands of hours of conversation, I had never heard or recorded a single example of the type of coverb = finite verb = enclitics verbal structure found in Laves' data (except for the three exceptional subclasses listed in §2.1.1). Yet it seems that older Ngen'giwumirri speakers clearly recall this variation, and not only as definitive of Ngen'gimerri but equally as true of Ngen'giwumirri. But while Ngen'giwumirri speakers happily repeated those coverb = finite structures which I read to them from Laves texts, they never spontaneously produced other such constructions, even in the context of discussion of this very topic. It is primarily on the basis of this evidence, then, that I have assumed all the Ngan'gityemerri dialects to have undergone this morphosyntactic restructuring in the same way and at about roughly the same time. Recall though, that Hoddinott and Kofod's (1989) observation that constituent ordering in Ngen'giwumirri was a little 'less fixed than in Ngan'gikurunggurr', provides a suggestive hint that there may have been at least some timing differences between the dialects.

The occasional variation in ordering encountered by Tryon and Hoddinott and Kofod now starts to make sense. Their claim that this type of variation was acceptable only twenty years ago sits nicely with the memories of contemporary elder Ngen'giwumirri speakers who clearly recall such variation even though they no longer spontaneously produce such ordering in their own speech. It thus seems that Tryon and Hoddinott and Kofod, working in the late 1960s and early 1970s, may have just caught the tail end of the stage in this structural

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[11] Stanner, working several years later, uses the term Nangiomeri for Ngen'giwumirri, and Moil for Ngan'gikurunggurr. Other writers have used Moyel, or Moil as a blanket term in reference to both dialects.

evolution of the verb during which a variety of structural types co-existed. Certainly this phase was complete by the time I began fieldwork on these dialects in the early 1980s.

So what happened to the Ngan'gityemerri verb? We are now in a position to tie together the various bits of evidence, and see how the verbal complex lost its two-word structure and developed its fixed ordering and single phonological word status.

Sixty years ago the coverb varied between appearing before the finite verb and appearing after the finite verb. In either position it represented a constituent that was not strongly bonded to the finite verb. In addition to the indexing of core participant roles and TAM inflection, it was the finite verb that hosted additional kinds of verbal morphology, such as the applicative, divisive and body-part morphemes. The overt presence of such morphemes, together with the preference for them to be verb-final, tended to send the coverbs to the front. The few subclasses of irregular verbs in contemporary Ngan'gityemerri that have the ordering coverb = finite verb = enclitics (as found in examples (5)–(7)), can logically be thought of as relics of this earlier stage.

The coverb begins to remain in a position after the finite verb, even in the presence of finite verb enclitics. Moreover, some of the verbal morphology that was previously only encliticised to the finite verb (such as applicatives and body-parts), comes to be reinterpreted as prefixes to the coverb, e.g. (i) below becomes (ii).

(i) finite verb-applicative-bodypart coverb

(ii) finite verb applicative-bodypart-coverb

A few examples of this attraction can be found in Laves. Consider (31) below.

(31) warrangitipe piparlendipe
Warra-ngiti=fi-pal=endi-pe.
3plS.PokeSelf.IR-1sgG=CAUS-return=EMPH-Fut
'They'll be coming back to/for me.'

Compare the position of the 'Causative' applicative *=fi-* in example (31) with that found in (28). In (31), although Laves does not mark stress, we find evidence of *=fi-* reanalysed as a prefix to the coverb *parl* (though Laves has written it as *-pi-*, its identity is not in doubt). This reanalysis is evidenced weakly in Laves breaking up this complex into two orthographic words. It is more strongly evidenced by the fact that both the finite verb root and the coverb root host the tense-marking enclitic *-pe*. Clitic concord of this kind strongly suggests that Ngen'gimerri had a phrasal verb structure, characterised by the combination of a free-form finite verb, and another free-form unit which has begun to develop its own morphological complexity. So lexical coverbs have genuinely become roots, and started to attract their own dependent morphology.

The motivation for this re-encliticisation of tense marking to the coverb in (31) flows from the preference for the enclitic morphemes to be the final element of the complex verb. This same preference earlier prevented coverbs from appearing after the encliticised finite verb. Now that coverbs remain in the postfinite verb position, the enclitics reattach to it. Once the enclitics are hosted by the coverb, and thus retain their verb-final position, they no longer need to also attach to the finite verb. We now have a verbal structure that looks remarkably like that found in contemporary Ngan'gityemerri, except that it still comprises two phonological words. While Laves does not record word stress, assuming all words to be

stressed on their initial syllable, we would now have stress marking on the initial syllable of the finite verb, and also on the initial syllable of the coverb.

(32) áuxiliary ápplicative-divisive-bodypart-coverb=enclitics

At this stage, as encountered by Tryon and Hoddinott and Kofod in the late 1960s–1970s, the coverb still shows some capacity to appear in the position before the finite verb, but only where it comprises a bare coverb.

From the two-word verb complex in (32) above, only two changes remain to get us to the contemporary Ngan'gityemerri verb. Firstly we develop fixed constituent ordering, such that bare coverbs can no longer freely shift to the position in front of the finite verb. Secondly, fixed ordering leads to phonological merger, producing a single phonological word, as in the following example.

(33) áuxiliary=ápplicatives-divisive-bodypart-coverb=enclitics

Note that this merger now provides an explanation for why the unit labelled coverb in contemporary Ngan'gityemerri is relevant to the rule assigning secondary stress to the complex verb.

We can summarise §3 with examples of the stages discussed here.

STAGE 1: Coverb Finite verb
[two separate words, ordered as above]

(34) wurl ngudumuipe (example (29) repeated)
Ngudu=mi-wul=pe.
1sgS.Shove.IR=APPLIC-return=Fut
'I'll take it back.'

STAGE 2: (Coverb) Finite verb (Coverb)
[two words, coverb can variably appear after the finite verb when the finite verb carries no enclitics, thus bracketed constituents are either/or].

(35) Dudu dam dam dudu, kinji dinj parl (example (23) repeated)
Dam-dudu *dam-dudu* *kinyi* *diny-pal* ...
3sgS.Poke.PF-track 3sgS.Poke.PF-track here 3sgS.Sit.PF-camp
'He tracked it, he tracked it along here (to where) it made camp ...'

STAGE 3: Finite verb = Enclitics (Coverb)
[two words, coverb now appears after the finite verb, even when the finite verb carries enclitics].

There are no examples of this putative stage in Laves' corpus.

STAGE 4: Finite verb=Enclitics Coverb → Finite verb prefixes=Coverb
[still two words, coverb appears after the finite verb. Applicative, divisive, and body-part morphemes get reinterpreted from enclitics to the finite verb, to prefixes to the lexical coverb root. We now have a morphologically complex coverb. Tense enclitics can appear on both words].

Laves provides examples of this stage, as in (36) below, but note that no examples of this type can be found in contemporary Ngan'gityemerri.

(36) warrangitipe piparlendipe (example (31) repeated)
Warra-ngiti=fi-pal=endi-pe.
3plS.PokeSelf.IR-1sgG=CAUS-return=EMPH-Fut
'They'll be coming back to/for me.'

STAGE 5: Finite verb = Coverb = Enclitics
[Enclitics attach only to coverb. Finite verb and coverb merge into single phonological word, but secondary stress marking falling on the initial syllable of the coverb is a residual marker of its former word status].

(37) (example (1) repeated)
Wári-ngi=fì-mi-tyerr-tit=nyine-pe.
3sgS.Poke.IR-1sgO=CAUS-APPLIC-mouth-raise=FOC-Fut
'He's about to teach it to me now.'

4 Further recent verb complex innovation in Ngan'gityemerri

There are two features of contemporary Ngan'gityemerri of which no evidence can be found in Laves' data. The first is the development of encliticised finite verbs coding progressive aspect as the final element of the verbal complex. The second is incorporation into the verbal complex of a set of body-part morphemes. This section argues that these are recent innovations in Ngan'gityemerri, and considers how the coding of innovated categories can be handled within an essentially polysynthetic fixed ordered verbal complex.

4.1 Serialised verbs as aspect marking enclitics

Aspect cannot be said to be marked neatly in Ngan'gityemerri, the task of marking aspectual information falling onto several overlapping subsystems, including finite verb inflection, coverb reduplication, and encliticised serial verbs. Discussion of finite verb inflection and coverb reduplication can be found in Reid (1990). This section looks briefly at a mechanism of using encliticised serial verbs to code aspectual information, that has all the hallmarks of being a recent innovation.

In contemporary Ngan'gityemerri the five intransitive finite verbs, *Sit*, *Lie*, *Stand*, *Go*, and *Travel*[12] can be serialised to the entire verbal complex as aspectual operators coding imperfective aspect.

(38) FINITE VERB = COVERB = SUFFIX GROUP = SERIAL FINITE VERB

Morphologically, these serial verbs function as enclitics to the complex coverb, though they are distinguishable from the enclitics that we have already encountered by virtue of being added on as the final right-most element of that group. As their morphophonological status might suggest, these enclitics fall within the pitch contour assigned to the verbal complex as a single phonological word. They are assigned no stress, not even secondarily, and because they typically occur utterance-finally, they are characterised by falling intonation and lack any auditory prominence.

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12 The finite verb *Travel* differs semantically from *Go* in denoting more purposive, goal-oriented movement.

Another characteristic of the serial verb construction is that both the main verb and the encliticised serial verb are fully inflected finite verbs overtly coded morphologically for subject person/number and TAM categories. However, strict agreement constraints make it clear that this is a complex monoclausal construction, rather than a biclausal paratactic construction.

An encliticised serial verb functioning as an enclitic must show concord with the main finite verb with regard to tense/aspect/mood inflection, and subject person and number. This is demonstrated in examples (39)–(41) below (for these three examples I've adopted the convention of bolding those components of the gloss which indicate the required concordance. I've not maintained this convention throughout the rest of this section though).

(39) *Warri-batybity-pe-wirri.*
3plS.Poke.**IR**-sew-Fut-**3pl**.Sit.**IR**
'They will be sewing.'

(40) *Dangim-batybity-dim.*
3sgS.Poke.**PR**-sew-**3sgS**.Sit.**PR**
'She is sewing.'

(41) *Nganni-batybity-tye-nginni.*
1plexS.Poke.**P**-sew-Past-**1plexS**.Sit.**P**
'We were sewing.'

Looking now at the subjects of encliticised serial verbs, note that person concord is always with the syntactic subject of the main finite verb. Ngan'gityemerri has an 'impersonal verb' construction (see Walsh (1987) for more detailed discussion of this verb type) where non-volitional patients get cross-referenced as the direct object of an unspecified referentless third person singular subject. These kinds of constructions, as in (42)–(45) below, are always translated by Ngan'gityemerri speakers into English constructions where the semantic patient is syntactic subject, as indicated by my translations, rather than the bracketed 'literal' translations. Even in such 'impersonal verbs' though, subject marking on the encliticised serial verb shows strict concordance with the referentless third person singular subject marking.

(42) *Dani-ngi-kada-tye-dini.*
3sgS.Poke.PI-1sgO-sad-Past-3sgS.Sit.PI
'I was feeling sad.' (lit. 'It was saddening me.')

(43) *Danging-ngi-fulful-yenim.*
(NgK) 3sgS.Poke.PR-1sgO-twinge-3sgS.Go.PR
'I keep feeling this "twinge".' (lit. 'It was "twinging" me.')

(44) *Deme-nyi-mi-dit-tye-dini* *kuru-nimbi.*
3sgS.Hands.PI-2sgO-APPLIC-ache-Past-3sgS.Sit.PI liquid-CAUS
'You still had a headache from the beer.' (lit. 'It was making you ache.')

(45) *Fidi-nide* *wa-ngirrki-syalat-pe-wiri.*
heat-LOC 3sgS.Heat.IR-1dlexO-warm-Fut-3sgS.Sit.IR
'We'll get warm in the sunshine.' (lit. 'It will warm us.')

Encliticised serial verbs concord only for the subject marking that is cross-referenced on the main finite verb, and cannot play host to non-subject marking. As is evident from example

(47) below, this constraint extends even to the copying of the indirect objects of reflexive verbs, where the Goal (G) is co-referential with the subject.

(46) *Ngeme-mbi-yen'gi-tye-ngini* (*-mbi).
1sgS.Hands.PI-2sgG-tell.story-Past-1sgS.Sit.PI (*-2sgG)
'I was telling you a story then.'

(47) *Demen-ne-dundum-yenim* (*-ne).
3sgS.Hands.Self.PR-3sgG-bury-3sgS.Go.PR (*-3sgG)
'(The sandfrog who) habitually buries himself in the sand.'

Likewise, the subject of the encliticised serial verb cannot represent the aggregate of the subject and non-subject arguments of the main verb. Thus in example (48) below, the attempt to serialise a finite verb with first person exclusive dual subject marking, as the sum of first person singular subject and third person singular goal marking, is ungrammatical.

(48) **Ngerim-ne-tyerr-baty-ngannung-gu.*
1sgS.Hands.PR-3sgG-mouth-hold-1plexS.Go.PR-dlS
'I am leading him along.'

Any violation of the requirement that the subjects of the main finite verb and the encliticised serial verb be fully coreferential, is quite ungrammatical. Note that an example like (48) above could plausibly be interpreted as 'I lead him, we are going along', though to fulfil the phonological requirements of an independent paratactic clause *ngannunggu* (an enclitic in (48)) would have to be set off on its own intonation contour with primary stress marking on its initial syllable, and of course this would neutralise the imperfective aspect reading. Alternatively, note that example (48) could be repaired by substituting the encliticised finite verb *ngannunggu* with *ngaganim* 'I go'.

As imperfective aspect operators, the *Sit*, *Lie*, *Stand*, *Go* and *Travel* finite verbs can have the same sort of classificatory role with regard to posture/motion that they display as main finite verbs in general intransitive verbs. *Sit*, *Lie* and *Stand* classify the action of the verb with respect to the posture of the subject, for example:

(49) *Yawul karrityinmade ngebem=wurity=ngirim tyatma.*
spear bent 1sgS.Bash.PR=fix=1sgS.Sit.PR straight
'I'm sitting straightening this bent spear.'

(50) *Yawul karrityinmade ngebem=wurity=ngibem tyatma.*
spear bent 1sgS.Bash.PR=fix=1sgS.Lie.PR straight
'I'm lying straightening this bent spear.'

(51) *Yawul karrityinmade ngebem=wurity=ngirribem tyatma.*
spear bent 1sgS.Bash.PR=fix=1sgS.Stand.PR straight.
'I'm standing straightening this bent spear.'

However, in general serialised aspectual finite verbs are bleached of any strong lexical semantic content, and it is the serialised *Sit* finite verb which is the posturally unmarked choice for imperfective actions performed within a single location. Thus examples (50) and (51) above can be said to be highly marked with respect to posture. Conversely, it would be quite natural for (52), employing the *Sit* finite verb, to be uttered by someone standing over a billy.

(52) *Nginem=purrngpurrng=nyine=ngirim!*
1sgS.Heat.PR=boil=FOC=1sgS.Sit.PR
'I'm boiling it right now!'

The choice of the *Go* finite verbs as imperfective aspectual markers either denotes motion as in (53) and (54), habitual activity as in (55) and (56), or common knowledge facts as in (57) and (58).

(53) *Werrmim-ne=tyerr-baty=wannim.*
3plS.Hands.PR-3sgG=mouth-hold=3plS.Go.PR
'They are leading him along.'

(54) *Wasangari-kana* *wirribem,*
(NgK) Clean-FOC 3sgS.Stand.PR

yerim=fityi=pefi=yaganim.
2sgS.Hands.PR=roll=THITH=2sgS.Go.PR
'(The car) is clean now, you can drive it away.'

(55) *Yerr-ngini-warrgudu-gumu*
Tree-KIND-dillybag-SEMB
'They were repeatedly throwing a thing like a dillybag

wunni=wutyity=tye=waddi *a-bilirri-ne.*
3plS.Slash.PI=throw=Past=3plS.Go.PI Anim-alive-PURP
'(a throw net) in order to catch live bait.'

(56) *Madewetimbi* *wa-mumu-nimbi* *resyin*
long.ago Male-taboo-SRCE rations

wurrmu=wawu=tye=waddi.
3plS.Snatch.PI=pick.up=Past=3plS.Go.PI
'In the old days they used to collect rations from the policeman.'

(57) *Detyeri-werri* *yenim* *dem=wurity=yenim* *mudiga.*
ear-ASSOC 3sgS.Go.PR 3sgS.Hands.PR=fix=3sgS.Go.PR car
'He knows how to fix cars.'

(58) *Gagu* *a-niyen,* *a-yaga* *menyirr* *nganimuy-nide,*
animal Anim-sandfrog Anim-DEM sand loose-LOC
'Ancestral Sandfrog, that one who always buries himself in the loose sand,

demem=dundum=yenim *kine* *puty-meny-me,*
3sgS.Hands.Self.PR=bury=3sgS.Go.PR this create-3sgS.Do.PF-hand
'he made this place,

Niyen.
place
'Niyen.'

There are two factors which suggest that this type of complex predicate structure in contemporary Ngan'gityemerri has only been developed very recently. Firstly, there is no evidence of encliticised serial verbs in Laves' Ngen'gimerri data of 1930. In contemporary Ngan'gityemerri encliticised serial verbs occur frequently in text, and a text corpus as

substantial as Laves' would be expected to include some if they were a feature of this language in the 1930s.

The second factor draws on typologically driven expectations about the position of aspectual operators with respect to verbal nuclei. The ordering of these encliticised serial verbs as the final element of the verbal complex in Ngan'gityemerri stands as a counter-example to two of the general claims made by Foley and Van Valin about the relationship between aspectual operators and the verb nuclei over which they have scope. Foley and Van Valin (1984:210) claim that aspect is a nuclear operator while tense is a peripheral one. They argue that this difference in scope is reflected in ordering constraints in those languages that mark tense and aspect as separate inflectional categories. Quoting examples from Kewa (Franklin 1971) and Tiwi (Osborne 1974) they note that aspect is always marked closer to verb nuclei than tense, and add that 'they know of no cases of the inverse ordering in which tense is closer to the stem than aspect' (Foley & Van Valin 1984:210). Similar claims are to be found in Bybee (1985).

In contradistinction to this claim Ngan'gityemerri clearly marks tense closer to the verb nucleus than imperfective aspect. This is demonstrated in (59) below, where the Past tense enclitic *-tye* immediately follows the coverb, and is in turn followed by the serialised 'Sit' finite verb.

(59) *Wanni=batybity=tye=winni* *warrgudu.*
3plS.Poke.PI=sew=Past=3plS.Sit.PI dillybag
'They were sewing dillybags.'

Foley and Van Valin also describe the relationship between directionals and aspectual markers (both nuclear operators) in the following way. 'Kewa also has directional suffixes and provides evidence that of the two nuclear operators aspect and directionals, aspect is the more inner. For when a verb is inflected for both aspect and directionals, aspect occurs immediately following the coverb, followed by the directional, followed in turn by tense' (Foley & Van Valin 1984:212). Unlike Kewa, in Ngan'gityemerri we find the directional enclitics (*pefi* in (60)) 'inside' the serialised aspect enclitic.

(60) *Wasangari-kana* *wirribem,* *yerim=fityi=pefi=yaganim.*
clean-FOC 3sgS.Stand.PR 2sgS.Hands.PR=roll=THITH=2sgS.Go.PR
'(The car) is clean now, you can drive it away.'

While the ordered position of aspectual operators in the Ngan'gityemerri verb violates the ordering constraints that, according to Foley and Van Valin (1984:212), are widespread in the languages of the world, this does not so much weaken Foley and Van Valin's claim, as point to the recent development of these encliticised serial verbs. Clearly the serialised posture/motion finite verbs in Ngan'gityemerri are not good examples of aspectual operators. By weakly retaining some of their lexical semantic character, and by fully inflecting for subject and TAM categories, they are still more than just simply markers of aspect. If these encliticised serial verbs in contemporary Ngan'gityemerri were to fully lose their lexical semantic characteristics and develop into simple aspect markers, one might predict, in view of Foley and Van Valin's claim, that they might shift 'inside' the tense markers to a position closer to the coverb, as indeed they have in the neighbouring language Marrithiyel where the

major tense/mood enclitics have shifted rightwards from the transitive verb to appear on the serialised intransitive finite verb (Green 1989:175).[13]

(61) Marrithiyel
Awu nginj-bi gangi-ya.
meat 1sS.R.nj-cook 1sS.R.sit-Pst
'I was cooking the meat on the coals.'

4.2 Syntactic incorporation of body-part terms

Analysis of contemporary Ngan'gityemerri verbs benefits from a distinction between lexical and syntactic incorporation of body-part morphemes. A fuller description of the distinction can be found in Reid (1990), Green (1989), and Evans (1996). For the purpose of this discussion, the distinction can be summarised as follows.

Firstly, syntactic incorporation is 'optional', in the sense that the construction can be paraphrased by extracting the body-part noun and having it appear as a free-form noun external to the verb. Syntactic incorporation is productive, and constrained to certain predictable grammatical relations holding between the incorporated nominal and predicate (prototypically, where body-part possessors are the objects or locatives of transitive verbs). Thus in (62) below, *panmi* could either appear outside of the verb, or indeed could be substituted with *firr* 'foot', *garri* 'leg', *purr* 'bottom', etc.

(62) *Dangim=fi-panmi-tyat (da-panmi).*
3sgS.Poke.PF=CAUS-crotch-place BOD-crotch
'He placed it in the fork (of the tree).'

Secondly, lexical incorporation, on the other hand, is a compounding process that takes a body-part morpheme and a coverb, and from them derives a new coverb. Lexical incorporation is non-productive, cannot be paraphrased by having the body-part noun appear outside the verb, and the meaning of coverbs is typically compositional and implicit, and not amenable to description in terms of syntactic relations. Thus *tyeribaty* in (63) below is a lexically compounded coverb meaning 'listen', so *tyeri* is not omissible, nor can it be productively substituted with any other body-part morphemes.

(63) *Ngibem-mbi=tyeri-baty.*
1sgS.Lie.PR-2sgG=ear-hold
'I'm listening to you.'

Now, returning to Laves' data, we have already noted the restructuring that has taken body-part terms from being suffixes to the finite verb and grouped them along with applicative and divisive prefixes in a coverb unit along with the coverb root. However, while there is some evidence in Laves' Ngen'gimerri data of incorporated body-part roots, all examples are body-part incorporation of the lexical kind, regardless of the ordering of coverbs with respect to the finite verb.

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[13] This data comes from Green (1989), but the analysis is my own. Here, and in the following section on body-part term incorporation, I am operating on the as yet unproven assumption that Marrithiyel has earlier undergone similar restructuring through areal diffusion of this verbal type.

(64) darl menj mui
Tal-meny-muy.
focus-3sgS.Do.PF-eye
'He focused his eyes on the distance.'

(65) wannimne mendjityerr
Wannim-ne-menytyi-tyerr.
3plS.Go.PF-3sgG-throat-stop
'They waited for him.'

In other words there are no examples to be found in Laves data of the type of syntactic body-part term incorporation where the body-part morpheme is omittable or externally paraphrasable. In contemporary Ngan'gityemerri, syntactic incorporation of body-part terms is highly productive, but its frequency of occurrence is dependent on text type. It is in texts about travel across the landscape that the highest rates of occurrence are found. I have collected texts where nine contiguous verbs include incorporated body-part terms. Significantly, even in Laves' texts that fit this contextual 'type', no examples of syntactic incorporation are found.

Assuming syntactic incorporation to have developed in Ngan'gityemerri since the 1930s, it is possible to now consider how a language that has developed a fixed polysynthetic verbal structure goes about the task of coding a new type of grammatical information, in a manner that may inform our understanding of the contemporary verbal structures of not only Ngan'gityemerri, but also the Western Daly languages. Let us take Ngen'giwumirri and Marrithiyel as examples. Once you have moved from a loose phrasal type verb characterised by a finite verb and an independent coverb, to a highly 'glomped' polysynthetic structure, as described above for contemporary Ngan'gityemerri, you have a fixed constituent 'finite verb = coverb' structure to which the enclitic group can be attached. For example:

(66) [fínite verb = (applicative) – (divisive) – (lexical bodypart) – coverb] = enclitics

Faced with the prospect of coding a new category of grammatical information (i.e. syntactically incorporated body-part terms), there are only two possibilities. Either you must develop new slots to the right of the coverb, or you make double use of existing slots by assigning the marking of the new information to existing slots within the coverb.

In developing syntactic incorporation of body-part terms, Ngan'gityemerri and Marrithiyel have each exploited one of these options. In Marrithiyel, which also has lexically incorporated body parts to the left of the coverb, we find the subsequent development of syntactic incorporation assigned to a new slot to the right of the coverb root. For example:

(67) Marrithiyel
[finite verb – applicative – divisive – lex bodypart – coverb] – syn bodypart – enclitics

(68) Marrithiyel (lexical)
Ngirringgi-yan-dim-Ø-a.
1plexS.rr.IRR-nose-sink-plS-Past
'We should have drowned him.'

(69) Marrithiyel (syntactic)
Ginj-inj-duk-miri-ya *sjiri.*
3sgS.nj.PF-2sgO-pull.out-eye-P splinter
'She removed a splinter from your eye.'

In contrast Ngan'gityemerri has opted for assigning the marking of syntactic incorporation to the same verbal slot as lexically incorporated body-part terms.

(70) Ngan'gityemerri
[finite verb = applicative – divisive – lexical bodypart – coverb] = enclitics
syntactic bodypart

(71) Ngan'gityemerri (lexical)
Ngibem-mbi=tyeri-baty.
1sgS.Lie.PR-2sgG=ear-hold
'I'm listening to you.'

(72) Ngan'gityemerri (syntactic)
Dangim=fi-panmi-tyat.
3sgS.Poke.PF=CAUS-crotch-place
'He placed it in the fork of the tree.'

However, for Ngan'gityemerri one consequence of assigning syntactically incorporated body-part morphemes to the same verbal position as lexical incorporation, is that syntactic incorporation is blocked where the coverb is a lexicalised *body part – coverb root* compound. There is room for only a single nominal root, and lexicalised compounds have prior claim to this slot.[14]

The situation with Marrithiyel is not quite as neat as this suggests. There appears to have been some bleeding between the two body-part term positions in contemporary Marrithiyel, and also some evidence for the reassigning of lexically incorporated body-part morphemes to the post-coverb position (I. Green pers. comm.). However this account does provide for a plausible mechanism whereby languages like Marrithiyel (Green 1989), and possibly Mayali (Evans 1996), come to develop multiple slots within the verbal complex to which different types of incorporated nominal are assigned.

5 Direction and timing of these morphosyntactic changes

If the arguments put forward are convincing, we have evidence for Ngan'gityemerri having undergone a fairly radical morphosyntactic restructuring. Only sixty years ago we find a loose phrasal type verb, the last vestiges of which were recorded by Tryon, Hoddinott and Kofod in the 1970s. By the mid 1980s the Ngan'gityemerri verbal complex has become a tightly structured polysynthetic unit with an enclitic group allowing for the coding of further grammatical information within the verb complex as a whole.

Two aspects of these changes, their speed and their direction, deserve some comment. Firstly, the speed of this restructuring, even allowing for it to have begun a few generations before Laves' visit to the Daly, would appear at first glance to be rapid. However, there are no real models for diachronic morphosyntactic restructuring in Australia with which the

[14] This 'consequence' is not ubiquitous. As demonstrated here, languages like Mayali and Marrithiyel allow multiple nominal roots to be incorporated into different slots, depending on their function.

Ngan'gityemerri situation can be usefully compared. Looking beyond Australia, while there is a wealth of literature on morphosyntactic changes to English and other European languages, the radically different type of speech communities of these languages calls the applicability of any such models to Australian contexts into question. There is a dearth of research into rates of morphosyntactic change in small, non-literate speech communities, although Nettle (1999) suggests that language changes can be 'fixed' more readily in small speech communities. Given the tiny size of the Ngan'gityemerri speech community (about a hundred people), it is probable that innovations are exposed to the whole community in a very short time, and if adopted can become norms almost instantly. Small speech-community size would thus appear to facilitate *parole* becoming *langue*, and in light of this, the view that the changes documented here are 'radically fast' may be nothing more than expectations predicated on models of language change based on much larger speech communities.

Secondly, let us consider the direction of these changes. The period of 1900 onwards has been one of massive upheaval for Ngan'gityemerri speakers. During this period contact with Europeans ended the old order and ushered in a period of almost unimaginable social disruption (see Stanner's (1933) description of the Daly). Two issues arising here are: was this substantial language change triggered by these events? And is this change associated with language death/disuse in any way? What we know about the use of Ngan'gityemerri, coupled with the facts about the structural changes described here, can shed some light on these questions.

Ngan'gityemerri speakers themselves, despite the social turmoil of the time in question, describe a continuous and strong tradition of speaking this language, even though at times, such as the years of the Army camps,[15] the pool of speakers became quite small.

If the structural changes that have taken place in Ngan'gityemerri somehow resulted from contact with English, we would anticipate that morphosyntactic restructuring would flow in the direction of English. This expectation is established on the basis of several studies, such as Lee's (1987) study of Tiwi, and in Schmidt's (1985) study of young speakers of Dyirbal. In both these cases we find evidence of widespread and systematic reduction in morphological contrasts. In the case of Tiwi, contact with English has lead to massive simplification of the Tiwi verb structure by younger generations of speakers. Among other changes, Lee describes the reduction of complex verbs to bare coverbs by stripping them of all affixal and inflectional morphology. Amongst young speakers of Dyirbal, Schmidt records, among other things, systematic reduction and neutralisation of nominal case categories. In both these studies the direction of recorded changes is clearly towards English, at least in the sense of the changes being geared towards decreased morphological complexity and increased analytic word formation.

In stark contrast to these case studies, the recorded changes in Ngan'gityemerri are clearly in the direction of increased morphological complexity and synthesis. There is nothing about the process of taking a phrasal verb and restructuring it into a polysynthetic complex that can conveniently be viewed as resulting from pressure brought to bear on Ngan'gityemerri from the direction of English. For these reasons I believe that these changes were incipient in Ngan'gityemerri, and their timing with respect to contact with English speakers quite coincidental.

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15 During WWII there were a series of Defence Force staging camps along the Stuart Highway. Many Ngan'gityemerri speakers drifted to these camps to seek work collecting firewood and shooting game.

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5 *The genetic status of Murrinh-patha*

IAN GREEN

1 Introduction[1]

Murrinh-patha (Mp) is a non-Pama-Nyungan prefixing language of the Wadeye region, in the south-western section of the Northern Territory's Top End. The language was once claimed to be closely genetically linked to a southern neighbour known as 'Garama'. Thus O'Grady, Voegelin and Voegelin (1966:76) present Mp and Garama as together making up the 'Garaman' family. The same claim appears in Oates and Oates (1970:21). This claim, however, is built on an entirely fictional construct of a Garama language as distinct from Mp. There is no evidence that there ever was such a separate language, 'Garama' (more correctly /garrama/) simply being an alternative term, Jaminjung in origin, for Mp itself (Tindale 1974:140, 232; Walsh 1976:9–11). This phantom congener disposed of, subsequent investigators (Walsh 1976; Voegelin & Voegelin 1977; Street 1987) have found no reason to entertain the possibility of the language having close genetic links with any of its neighbours, and there have otherwise been no suggestions that Mp should be subgrouped with any language further afield. In particular note that despite its typological affinities with languages of the Daly region, located to the immediate north and east of Mp, Tryon (1974) excluded Mp from membership of his purported Daly language family. Mp has thus been regarded as an isolate, taken to be a member of the Australian language family, but sharing no common parent more recent than Proto Australian with any other language in the continent.

1 The language data in this paper is taken from the following sources: Jaminjung: Cleverly (1968), supplemented by Chadwick (1984) and Schultze-Berndt (2000); Marringarr: Green (field notes 1990–94); Murrinh-patha: Street (1987), Street and Street (1989), Walsh (1976); Ngan'gityemeri: Reid (1990, 1993 e-MS); Wagiman: Cook (1987), supplemented by Tryon (1968).

Language abbreviations are given at the beginning of this volume. Other abbreviations used here are as follows: 1,2,3 - first, second, third person; AV - auxiliary verb; AVR - auxiliary verb root; DS - different subsection; E - (first) exclusive; Exc - (first) exclusive; F - future; Inc - (first) inclusive; Irr - irrealis; MVS - main verb stem; nsnInc - non-singular non-inclusive; PI - past imperfective; PP - past perfective; Pr - present; PRO - pronoun; pX - proto X; R - realis; RE - remote-existential; REFL - reflexive; SS - same subsection; sS - singular subject; TAM - tense-aspect-mood.

Nicholas Evans, ed. *The non-Pama-Nyungan languages of northern Australia: comparative studies of the continent's most linguistically complex region*, 125–158.
Canberra: Pacific Linguistics, 2003.

Table 1: Shared vocabulary rates between Mp and its neighbours

Murrinh-patha (Mp)				
8%	*Ngan'gityemeri (NgTy) – Ngan'giwumirri dialect (NgW)*			
10%	33%	*Marringarr (Mng) – Marringarr dialect*		
9%	8%	3%	*Wagiman (Wag)*	
9%	<10%	<8%	<10%	*Jaminjung (J)*

The foundation stone for Mp's claim to such isolate status is undoubtedly its low cognate densities with surrounding languages. Mp borders on the north with Marringarr (the Marringarr and Matige dialects), on the east with Ngan'gityemeri (the Ngan'giwumirri dialect), and on the south and south-east with Jaminjung. It has been recently suggested (by Kim Barber, pers. comm.), somewhat controversially, since it runs counter to all previous mappings, that Mp also shares part of its eastern border with Wagiman; this remains to be verified, and the supporting evidence is not yet publicly available. With these neighbours, with scores derived from lists of basic (non-grammatical) words, Mp shares at most 11% vocabulary. Figures of this order are significantly below the bottom line of 15% taken by lexicostatisticians such as O'Grady, Voegelin and Voegelin (1966:24), Wurm (1972:110), and in his footsteps, Tryon (1974:x) for the Daly group, as delimiting members of the one 'phylic family'. The indicative individual figures are given in Table 1. Note that as no attempt has been made to eliminate borrowed items these are shared vocabulary rates rather than strict cognate densities; the weeding out of borrowed items from the comparative lists could well reduce even further the figures given here.

Adding to the strong case for the isolate status presented by the shared vocabulary rates is a paucity of formal correspondences in most areas of the grammar. Mp's free-form pronouns and case markers, for example, when set against the paradigms of the surrounding languages throw up occasional potential cognates, but produce no compelling evidence for close genetic linkages. Table 2 illustrates with partial paradigms of the free-form pronouns of Mp and its neighbours, and Table 3 gives comparative data on the nominal case markers:

Table 2: Partial paradigms of pronoun free forms in Mp and its neighbours[2]

	Mp	Mng	Ngty (Ngw)	Wag	J
1sg	*ngay*	*yin*	*ngayi*	*ngagun*	*ngayug*
2sg	*nhinhi*	*ninh*	*njinji*	*ngigun*	*nami*
3fem sg	*nigunu*	*nga*	*ngayim*	*ga'an*	*dji*
3mas sg	*nukunu*	*nang*	*nem*	*ga'an*	*dji*
1I dl	*neki*	*ganggi*	*nayin*	*nginjang*	*mindi*
1I pl	*neki*	*ganggi -nim*	*nayin -nime*	*ngego*	*yurri*
1E pl	*nganki*	*sjerr*	*ngagurr*	*ngego*	*yirri*
2pl	*nanki*	*nerr*	*nagurr*	*ngogo*	*gurri*
3pl	*pigunu*	*niwirr*	*wurrum*	*ga'godin*	*burri*

2 Mp, Mng and Ngw each have just the one set of free pronouns. The Wag free pronouns listed are the absolutive forms; for J cardinal pronouns have been tabled. Both Wag and J also have oblique and possessive free forms, their paradigms no closer to Mp than the set tabled here.

Table 3: Case marking in Mp and neighbours[3]

	Mp	Mng	Ngty (Ngw)	Wag	J
Ergative/ Instrumental	*te ~ re*	*ngarrin*	*ninggi*	*yi*	*ni, gi, di, i*
Purposive	*nu*	*ni*	*ne*	*gu*	*gu ~ wu*
Locative	*ngarra*	*na*	*nide*	*laying*	*ni, gi, di, i*
Allative	*ngarra katu, wangu*	*sra*	*nide pagu, pefi*	*ga*	*bina*
Ablative	*wangu*	*nganan*	*nimbe*	*gunda*	*ngunji*

Examining Tables 2 and 3 we can observe that only the Ngty free pronouns bear sufficient likeness to the Mp forms to raise any suspicion that they derive from a common ancestor more recent than Proto Australian. But any such suspicion is, on the strength of this data, difficult to confirm. In these free pronouns the two languages have putatively cognate whole first and second singular forms, and third masculine singular as well as first and second non-singular initial CVs (arguably stems). Of these, the first singular, third masculine singular /nV/ and second non-singular /nV/ cannot be considered as Mp-Ngty innovations, since Blake (1988:7) has argued that these three are all reconstructable for the non-Pama-Nyungan languages in general.[4] Equally, potential cognates for the second singular /NHiNHi/ and the /nga/ exclusive plural stem crop up in a sufficient number of other places to raise the possibility that they too are either relics or the results of parallel development, rather than innovations. The form /njinju/, for example, is found in Warndarang (Heath 1980:35), and /njinja/ in Kungarakany (Evans n.d.); /nga/ exclusive plural appears in Alawa, and /ngi/ in Na-kara, Mangarrayi, Jingulu and Kungarakany (Blake 1988:64). The /nV/ inclusive stem is a better candidate for a Proto Mp-Ngty innovation. /nV/ inclusives are otherwise found only in Marra, Nunggubuyu and Karrwa/Wanyi, but in these languages, unlike Mp and Ngty, some exclusive stems also have /nV/ shapes (Blake 1988:64, 67). However, the vowels of the /nV/ inclusive differ in Mp and Ngty, and the segments following the /nV/ in the two languages cannot be related in any independently motivated fashion. The free-form pronoun data, then, can at best be seen as *consistent* with a theory of a relatively remote relationship between Mp and Ngty, but provides us with nothing in the way of *proof* for any Mp-Ngty subgrouping.

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3 Underlined forms are prepositions, all other forms are suffixes or enclitics. Mp and Ngw have no single allative, the function being expressed by the locative and/or directional markers; all relevant forms are listed here. Note also that Mng /ngarrin/ has instrumental function only; no ergative has yet been identified in the language.

4 Since Blake reconstructs /*nu/ as a second non-singular stem, the /a/ vowel shape, rather than the whole /nV/ stem, could be argued to be the Mp-Ngty innovation. This remains to be determined. Note in this respect, however, that /na/ second non-singular stems are found elsewhere, for example in free forms in the Western Daly and Anson Bay languages (Green 1995), and in bound forms in Dalabon (Evans, Brown & Corbett 2001), Ngandi, and Miriwung (Blake 1988:53).

We can also note that Mp is phonologically distinctive. Mp has an apical contrast, and a voicing opposition at at least five points of articulation.[5] J has an apical contrast[6] but no voicing opposition. Wag has a voicing oppposition, but only a single apical series; further, its voicing contrast is restricted to word-medial position, unlike Mp, which additionally has voicing distinctions for its bilabials, apicals and laminals in word-initial position. And Ngty patterns phonologically with Mng rather than Mp. Ngty and Mng both lack an apical contrast, and both have a three- rather than two-way obstruent system, with voiceless stops and fricatives at up to four points of articulation, but voiced stops maximally at three (Reid 1990; Green MS).

Despite this array of dissimilarities, however, it is now clear that Mp, far from being an isolate, is in fact closely related to its eastern neighbour Ngty; indeed I propose that the two languages together make up the 'Southern Daly' subgroup. Such a subgrouping goes against that of Tryon (1974), who had Ngan'gityemeri as a branch of his Daly family, and flies in the face of the shared vocabulary scores, which would be more consistent with a close genetic link between Ngty and the Western Daly[7] subgroup. These scores are given in Table 4 (an expanded version of Table 1 above). Note in passing that the low scores in this table, particularly those like 8% between Murrinh-Patha and Ngan'gityemeri, constitute a clear counterexample to Dixon's oft-repeated claim that neighbouring languages in Australia tend to a 50% 'equilibrium level' of shared vocabulary as a result of borrowing (see e.g. Dixon 1972, 1997, 2002).

Table 4: Shared vocabulary rates between Mp, Ngty and their neighbours

Murrinh-patha							
8%	*Ngan'gityemeri (NgW dialect)*						
10%	33%	*Marringarr (Marringarr dialect)*					
7%	30%	60%	*Marrithiyel (Mth) (Marrithiyel dialect)*				
8%	29%	52%	58%	*Marramaninjsji (Mma)*			
5%	18%	<10%	15%	17%	*Gamu*		
9%	8%	3%	<8%	<8%	<7%	*Wagiman*	
9%	<10%	<8%	<8%	<8%	<7%	<10%	*Jaminjung (J)*

Proof of the close genetic link between Mp and Ngty comes not from any reanalysis of the lexicostatistics, but rather from the morphological heart of the languages: their verbal auxiliary systems. I shall show below that the correspondences that the two languages exhibit between paradigm after paradigm of verbal auxiliaries can only be explained genetically, as

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5 Walsh (1976) has six points of articulation, recognising a laminal opposition, while Street and Mollinjin (1981) have a single laminal, with conditioned dental and palatal allophones; these differing analyses are reviewed in Butcher (forthcoming) and Green (1995).

6 Cleverly's (1968) analysis of Jaminjung has only the one apical phoneme, but an alveolar–postalveolar contrast is recorded in more recent work by Chadwick (1984) and Schultze-Berndt (2000).

7 The Western Daly subgroup consists of Marringarr (dialects Marringarr, Matige), Marrithiyel (dialects Marrithiyel, Marrisjefin, Marri Ammu, Marridan), Marramaninjsji and Marranj (dialects Marranunggu, Emmi, Menhthe). See Green (1995 MS) for reconstruction of Proto Western-Daly and arguments for the subgrouping.

the result of a shared legacy from Proto Southern Daly (pSD); such likenesses cannot be accounted for by either form diffusion, structural convergence or drift.

But before proceeding I want to clarify the nature of my claim for a Southern Daly subgroup. There has been a tendency in Australian comparative practice to treat subgrouping somewhat less than rigorously, and it has often been assumed in Australia that sets of contiguous languages with over 40% shared vocabulary (see Dixon 1980:255), largely identical free pronominal paradigms and relatable nominal suffixes constitute a 'subgroup'. Whether or not many of these assumptions ultimately prove to be correct, the point should be made that subgroups must be defined via sets of shared innovations. Australian languages bearing particular lexical and grammatical resemblances are not properly viewed as subgroups until an intermediate parent language can be reconstructed and distinguished, through its innovations, from Proto Australian. Otherwise it might be that such languages are simply conservative, their likenesses resulting from their retention of original Proto Australian features. A case in point here may be the Maric languages of central and southern Queensland. Maric is commonly regarded as a 'subgroup' (Dixon 1980:240), but as Terrill (1993:140) has pointed out, there has never been any reconstruction in print of Proto Maric, nor is there in the literature any attempt to document the innovations that might distinguish Proto Maric from an earlier ancestor, be it Proto Australian or Proto Pama-Nyungan. Until this is done we cannot properly talk of a Maric 'subgroup'.

One major obstacle to rigorous subgrouping of non-Pama-Nyungan languages is that the general neglect of non-Pama-Nyungan data in published reconstructions of Australian proto-languages makes it hard to determine whether a locally shared feature is indeed an innovation or a retention. The most detailed outline to date of a possible Proto Australian, Dixon's 1980 *Languages of Australia*, is, as a number of reviewers have noted (Black 1982; Heath 1982), not well informed by data from the non-Pama-Nyungan languages. Blake's (1988) 'Redefining Pama-Nyungan', in proposing a set of ancestral non-Pama-Nyungan free pronouns, goes some way towards redressing the Pama-Nyungan weighting of Dixon's Proto Australian, but is still skeletal in many respects, the reconstructions needing to be verified by detailed tracing and systematising of the changes required to arrive at the modern languages. And in any event, neither Dixon (1980) nor Blake (1988) are of particular use when we examine the noun class markers, pronominal prefixes and other verbal morphology of the non-Pama-Nyungan languages and seek to determine what has changed, and what has been retained, in the process of evolution from their ultimate progenitor.

For these reasons, and given the sheer mass and complexity of the morphology that we have to deal with, a rigorous and comprehensive demonstration that Mp and Ngty constitute a subgroup is beyond the scope of this paper. The best that we can do here is to lay some solid foundations on which an exhaustive and much lengthier proof of the claim can later be built. We shall do this by considering detailed comparative data for a few illustrative auxiliaries; we shall discuss how the data argues for a close genetic connection between Mp and Ngty, reconstructing aspects of the parent morphology and beginning to assemble a systematic view of the way in which the contemporary languages could have plausibly evolved from their proposed parent. This detailed reconstruction work is undertaken below in §3. And while the full demonstration that Mp and Ngty constitute a subgroup must remain for later work, the implicit claim here is that it is this set of reconstructed auxiliary paradigms which constitute the major recoverable innovations which define Proto Southern

Daly. That is, both the inventory of Proto Southern Daly auxiliary verbs, and their overall morphological form and structure, are distinctive, neither matched in the modern non-Pama-Nyungan languages, nor plausibly attributable to earlier stages of their development.

A detailed reassessment of the genetic status of the two southern Daly languages has become possible only in recent years, with the availability of Reid's (1990) doctorate on Ngty, which contains a full account of the verbal morphology for both extant dialects, Ngw and Ngan'gikurunggurr (Ngk).[8] There is no attempt at systematic reconstruction in Reid, so we will below examine data from both Ngw and Ngk rather than work from any pre-established pNgty construct.

For Mp there are two major grammatical sources: Walsh's (1976) doctorate and Street's (1987) *An introduction to the language and culture of the Murrinh-patha*, written as a learner's guide rather than a technical grammar. Mp data cited here comes primarily from Street, who was able to revise many of Walsh's earlier transcriptions, but the actual analysis of verbal structure and auxiliary patterning is more indebted to Walsh. Walsh (1976:4) identifies three dialects of Mp: Murrinh-kura, Murrinh-rdiminin and Murrinh-patha itself. Data presented here comes exclusively from the Murrinh-patha dialect; all three dialects are close, and there is no suggestion that they diverge grammatically in any significant way.

The Ngty palatals are represented herein as /Cj/ rather than /Cy/, but otherwise the orthography of the sources has been retained. Note in particular that the Street analysis of Mp as having a single laminal, which he represents as /Ch/, has been preserved. Street analyses Mp laminals as realised as dentals prior to back vowels, and as palatals elsewhere. This is in fact an underdifferentiation, Mp having a restricted opposition between dental and palatal stops (Walsh 1976:49–53; Butcher forthcoming); for comparative purposes this becomes an issue only in investigation of the nominal lexicon, and it does not prove a problem for the verbal reconstruction that we focus on here. The Mp and Ngty phonemic inventories are given in the Appendix.

2 Typology of Southern Daly auxiliaries

Like the Western Daly languages to their north, Mp and Ngty typically construct their verbs with a main verb stem prefixed with an 'auxiliary' and suffixed or encliticised with various person, number, tense, direction etc. markers. The auxiliary has three major functions:

(a) to index certain person, number, gender and, in Mp, kinship-status categories of particular core participants;

(b) to establish major TAM categories;

(c) to classify verbs.

The auxiliary can be viewed as having essentially a four-part structure, consisting of an initial bound pronominal, followed by an auxiliary verb root (AVR), which is in turn followed by a TAM marker and a final pronominal slot. The initial pronominal indexes the subject (i.e.

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8 The only other major study of Ngty is Hoddinott and Kofod's (1988) *The Ngankikurungkurr language*. Reid's description largely makes obsolete the Hoddinott and Kofod account, and it is Reid's data that will be cited below. Prior to the Hoddinott and Kofod volume Tryon's (1974) sketch grammar, containing half a dozen or so auxiliary paradigms, was the only publicly available material on Ngty.

S or A) with basically a single set of stems, there being no morphological distinction within the auxiliary for transitive, intransitive or middle subjects. The final pronominal slot indexes, if there is one in the clause, the most salient non-subject participant; this will typically be the object in transitive clauses and the indirect object in ditransitives, but may alternatively be a non-subcategorised theme, benefactive, locative etc. Both Mp and Ngty have two sets of pronominals here, the first set employed for those roles we can group together as direct objects, the second for all other indexable roles. Where there is no salient non-subject, the auxiliary-final slot may be filled by a morpheme which marks subject number. The subject number category encoded here is dual/trial in Ngty and dual/paucal in Mp; this applies to all non-singular subjects except for the first inclusive. In both languages the unmarked interpretation of the morphemes employed for this number function is dual; that is, an auxiliary affixed in this way is read as dual unless a subsequent verbal suffix or enclitic is attached to specify the trial or paucal reading. For convenience, then, I will refer to these subject number markers as 'dual' morphemes. For other subject categories, that is singular, first inclusive and plural, there is no overt auxiliary-final cross-referencing.

The auxiliary verb (AV) is the element responsible for verbal classification. AVs are of three types: low transitive, high transitive and reflexive. Low transitive AVs classify the 'stance' of the subject of the verb, specifying, among other things, whether the action is performed while sitting, standing, lying or in motion, as well as providing aspectual information. High transitive AVs generally classify verbs according to the nature of the contact or interface between the agent/instrument and undergoer; high transitive classifications include, for example, 'hands as instrument', 'mouth as instrument' and 'seeing', 'poking' and 'bashing' type actions. Reflexive AVs are semantically related to the high-transitives; they effect the same classifications of the agent–undergoer interface, but additionally mark the action, as Reid (1990:278) comments for Ngty, as 'directed towards a part/whole of [the subject's] self'. Street (1987) represents Mp as having a total of 35 classificatory auxiliaries;[9] Reid (1990) gives 31 for each of the Ngw dialects.

The TAM markers establish the major tense-aspect-mood oppositions of the verb, encoding categories such as (general) irrealis, realis past imperfective, realis future etc. The TAM coding in the auxiliary may be supplemented by subsequent verbal suffixes/enclitics which may either simply reinforce the auxiliary's categorial marking, or combine with it to more finely specify the TAM of the overall verb.

This conception of the auxiliary is summarised in the formula in (1a).

(1) a. AUX = Subject PRO + AVR + TAM + { IO - Ben - Loc etc. / O / Dual Subject }

This formula is illustrated in (1b) with a Ngty (Ngw) auxiliary form (Reid 1990:398), while (1c) exemplifies the auxiliary within a complex verb:

(1) b. NGW DIALECT (Reid 1990:398)

Wi rr	*-tji*	*-bem*	*-gu*
3non-sg Sub	'hang' AVR	PERFECT	Dual Subject

9 Though comparison with Walsh's (1976) inventory suggests that there could be as many as 40.

(1) c.	*Ti*	*wir*	*-tj*	*-bem*	*-gu*	*-kuduk*
	tea	3non-sg.Subj	'hang' AVR	PERFECT	Dual Subject	drink.REDUP

'They (2) drank tea' (e.g. while sitting up in a tree).

Note that (1a) represents a slightly idealised view of the auxiliary. As we shall see below, there is a certain amount of fusion, and it is not always possible in practice to segment the auxiliary as neatly as the formula suggests. In addition, even where segmentation is motivated, it is not practical to deal separately with the isolated subject pronouns, AVRs and TAMs, since their forms have a certain degree of interdependence. For example, the vowel shapes of the subject pronominals in Ngw play as much of a role in differentiating auxiliaries as do the AVRs, as illustrated below, where the contrast between 'do/say' and 'do/say REFLEXIVE' classification is achieved through the form of the AVR, but that between 'do/say REFLEXIVE' and 'hands REFLEXIVE' is brought about via the subject vowel.

(2) NGAN'GIWUMIRRI (Reid 1990:397, 403)

ngu	*-mu*	*-m*	1sg subject, Present, 'do/say'classifier
PRO	AVR	TAM	
1sS	do/say	PRES	
ngu	*-me*	*-m*	1sg subject, Present, 'do/say REFL' classifier
PRO	AVR	TAM	
1sS	do/say REFL	PRES	
nge	*-me*	*-m*	1sg subject, Present, 'hands REFL' classifier
PRO	AVR	TAM	
1sS	hands REFL	PRES	

Similarly, TAM forms to a considerable degree are determined lexically, according to the classificatory function of the auxiliary in which they appear.

In the final slot of the auxiliary the non-subject pronominals are fully independent in form and are always readily segmentable; the duals, however, are less so, there being some non-predictable fusion of the TAM, or (where there is zero TAM marking) the AVR, with the dual slot, and dual marking being affected through the shape of the final TAM or AVR vowel. For the purposes of paradigmatic auxiliary differentiation, then, the minimal unit of contrast could be said to be the whole Subject + AVR + TAM (+ Dual) sequence. It is the prehistory of this sequence that we shall focus on in this paper. While this interdependence of the components of the auxiliary sequence is a thorny issue for the synchronic analyst, as both Reid's (1990:105–106) and Walsh's (1976:218–227) discussions attest, it is something of a rose-garden for the historical linguist, providing us with incontrovertible evidence for subgrouping: not just individual cognate morphemes, but cognate morphemes in cognate sequences, complete with cognate irregularities, and unmatched in their detail in other Australian languages.

But there are significant differences between the Mp and Ngty auxiliary that we need to review before proceeding with the reconstructions. The Ngty auxiliary, for example, has fewer inflectional categories. For its subject pronominals four persons are distinguished: first exclusive, first inclusive, second and third. For first exclusive, second and third persons three numbers are encoded in the auxiliary: singular, dual/trial and plural. For these persons the plural auxiliary is generally formed by augmenting the singular subject stem with

(underlying) /rr(V)/; the dual/trial is then derived from the plural by the affixation of /gu/ in the auxiliary-final slot. For first inclusive, however, no number distinction is made in the auxiliary; a dual vs plural contrast is instead effected by suffixes to the main verb stem.[10] This person-number system is illustrated in Table 5, with the Past Imperfective form of the Ngty 'see' auxiliary (Ngk dialect).

Table 5: Ngty, Ngk dialect: 'see' Auxiliary, Past Imperfective (based on Reid 1990:411)

	Singular and Inclusive	Plural	Dual/Trial
1st Inc	*ngimbi -njirri -ni*		
1st Exc	*ngi -njirri -ni*	*ngi -rr -njirri -ni*	*ngi -rr -njirri -ni -gu*
2nd	*yi -njirri -ni*	*yi -rr -njirri -ni*	*yi -rr -njirri -ni -gu*
3rd	*di -njirri -ni*	*di -rr -njirri -ni*	*di -rr -njirri -ni -gu*

Mp auxiliaries mark the same four subject persons as Ngty. But Mp has further inflections, for kinship status and gender, which cause some additional complications. Now the Mp pronominal number system in general distinguishes singular, dual, paucal and plural. The kinship status category which is overlaid on this number system applies only to the duals and paucals, and is concerned with subsection membership, differentiating pronouns whose referents all belong to the same subsection (SS) from those whose referents do not (DS).[11] The gender inflection then applies only to DS (i.e. mixed subsection) pronominals; those whose referents are all males take the masculine gender, those whose referents include one or more females take the feminine gender. Fortunately, as far as the auxiliary is concerned, this does not result in any major proliferation of morphology. For a start the first inclusive auxiliary, which in Ngty shows no variation for number, in Mp has just a minor number–kinship status skewing. This is in the paucal SS category; here the inclusive–exclusive distinction is collapsed, and the single first person paucal SS is expressed using the expected exclusive form.[12] Thus in Table 6 the first inclusive paucal SS is conveyed by the same auxiliary as the first exclusive 'plural'. Apart from this category we have a single invariant first inclusive auxiliary, uninflected for number, gender or kin status. Note further that the Mp first inclusive auxiliary is frequently identical to the second or third singular auxiliary; we shall examine this relationship in the course of our reconstructions in §3.

10 There is no distinct trial category for the Ngty inclusive.

11 See Stanner (1936) and Falkenberg (1962) for discussion of Mp subsections. See Street (1987:49) for the full Murrinh-patha free pronominal paradigm.

12 This is according to Street's (1987:49; 80) data. Walsh (1976:153, 219) differs on this point; he has a simpler system in which the inclusive – exclusive distinction collapses throughout the paucal SS — plural category, this undifferentiated first person 'plural' being expressed with what is otherwise the exclusive stem. As Street's representation is the product of a much larger data base than was available to Walsh in 1976 it is adopted here.

Table 6: Mp: 'feet' auxiliary, present and past perfective (based on Street 1987:84)

	Singular and inclusive	Dual different subsection
1st Inc	*thu -nu -ngam*	*thu -nu -ngam*
1st Exc	*ngu -nu -ngam*	*ngu -nu -ngam -Ninhtha*
2nd	*thu -nu -ngam*	*thu -nu -ngam -Ninhtha*
3rd	*Ø -nu -ngam*	*Ø -nu -ngam -Ninhtha*

* N= /ng/ feminine, /n/ masculine

	Paucal same subsection and plural	Dual same subsection and paucal different subsection
1st Inc	*ngun -nu -ngam* paucal SS *thu -nu -ngam* plural	*thu -nu -ngam*
1st Exc	*ngun -nu -ngam*	*ngun -nu -ngam -ka*
2nd	*nun -nu -ngam*	*nun -nu -ngam -ka*
3rd	*pun -nu -ngam*	*pun -nu -ngam -ka*

For the other subject persons Mp auxiliaries fall into at most three number categories, basically singular, dual and plural. The 'singular' auxiliary has both singular and DS dual functions;[13] the singular reading is the unmarked one, and the DS dual reading is achieved by affixing a /nginhtha/ 'feminine' or /ninhtha/ 'masculine' morpheme in the auxiliary-final slot. The 'dual' auxiliary covers both the dual same subsection (SS) and the paucal mixed-subsection (DS), these categories being differentiated not within the auxiliary but by verb-final suffixes. The 'plural' then has both paucal SS and plural functions; these categories are differentiated neither in the auxiliary nor in the verb as a whole. In fact for all Mp non-inclusive pronominals the paucal SS – plural is a single undifferentiated category. Table 6, above, illustrates this in the Present-Past Perfective of the 'feet' auxiliary.[14]

The marking of subject stems for number is not as regular in Mp as it is in Ngty. In many Mp auxiliaries there are cognates for Ngty's regular process of deriving its (non-inclusive) non-singulars from the singular stem by the suffixation of what is synchronically underlying /rr(V)/; the final /n/ of the non-singular subject stems given in the lower half of Table 6, for example, is one such cognate. Such subject number marking, however, is not found universally in Mp auxiliaries. I argue below that this is a result of Mp dropping particular reflexes of the regular pSD /*rr(V)/ non-singular in a general process of auxiliary rationalisation and contraction. One consequence of this process is that a number of subject

13 Another language in which a non-singular kin-based category patterns like a singular is Dalabon (Evans et al. 2001).

14 Walsh (1976:339) calls this the 'feet' classifier while Street (1987:84) labels it the 'fast movement' auxiliary. I have opted for Walsh's label, but an examination of the relevant entries in the Mp dictionary (Street & Street 1989) shows that Street's label has a degree of appropriateness. The semantics of verb classifiers in these languages is so complex that any single-word label is bound to have certain inadequacies. What the Street–Walsh difference underlines here is an urgent need for a detailed study of Mp classifier semantics.

stems remain unmarked for the 'singular' (i.e. singular and dual DS) vs 'non-singular' (i.e. dual SS, paucal and plural) opposition. Further, the regular formation of the dual in Ngty by affixation of /gu/ is parallelled in Mp only in the Present-Past Perfective, where cognate /ka/ is attached. In the other TAM categories Mp dual formation is achieved instead through variation in the shape of the final vowel of the plural auxiliary. But this is a restricted and not highly predictable process, applying only to high vowels, and among them primarily to /i/. Again, this means that in these TAM categories the dual vs plural opposition is not regularly encoded in the auxiliary.

In the reconstructions below we shall exclude from consideration the Mp /Ninhtha/ dual DS gender morpheme. This has no cognate in Ngty, and its prehistory is not to be uncovered within the range of evidence that we focus on here.[15] This leaves us with four Mp categories, the unsufffixed singular, the inclusive, the 'dual' (i.e. dual SS plus paucal DS) and 'plural', to be lined up against the singular, inclusive, dual/trial and plural of Ngty.

Mp and Ngty also differ in their number of TAM oppositions encoded in the auxiliary. The Ngw dialect of Ngty has four categories: Realis Past Perfective (PP), Realis Past Imperfective (PI), Realis Present (Pr), and Irrealis (Irr). The Irrealis includes the future, imperatives, all negatives and past-counterfactuals. In the Irrealis there is one subcategory, for 'undesirable' (as opposed to neutral) irrealis events. 'Undesirable' events are 'those propositions that the speaker would not wish to reach fruition' (Reid 1990:112). 'Undesirable' marking applies only to second and third person subjects, and is effected through change in form of the subject pronominal rather than via a discrete TAM morpheme. The PP and Pr of the intransitive (and one or two other) auxiliaries also have a subcategory, one that Reid (1990:110) says marks out events that are 'remote', either spatially or conceptually, from the speaker. The remote category is also restricted, applying only to third person subjects, and is also marked by a change in form of the subject pronominal.

The Ngk dialect has the same system, except that the PP and Pr categories are not distinguished. In Ngw the Pr vs PP opposition is encoded in a fairly regular fashion, the two auxiliary modes typically differing only in the form of their TAM morpheme, the Pr marked with /m/ or /n/, and the PP with /nj/. Corresponding to this opposition in Ngk is a single nasal, represented herein as /M/, which assimilates to the point of articulation of a following consonant, and is otherwise (i.e. prevocalically and word-finally) realised as /m/. Reid (1990:164–168) has argued that a Ngk phonological development has eroded the original pNgty Pr vs PP contrast, viz. by making homorganic the nasal–consonant clusters across the auxiliary–verb stem boundary via assimilation of the nasal.

Formally corresponding to the single Ngty PI are up to two Mp categories: a Realis Past Imperfective (PIR) and an Irrealis Past Imperfective (PIIrr). The PIR is employed for the positive past continuous, and the PIIrr for the negative past-continuous and past counterfactuals. The distinction between the Realis and Irrealis Past Imperfectives is not consistently maintained in Mp, and in many auxiliary paradigms there is just the one undifferentiated Past Imperfective category. Further, where it is maintained, there is no consistency of morphological marking for the opposition. Such irregularity argues for the relative age of the distinction; that is, the Realis/Irrealis opposition in the Mp PI has certainly not developed in the one step from pSD, through the attachment of a single morpheme to the

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15 But let us not assume that it is a Mp innovation. Emmi, a Marranj (Western Daly) dialect, to the north of Mp, and separated from it by Matige and Marrisjefin (a Marrithiyel dialect), has non-singular gender morphemes /nginja/ 'feminine' and /nanja/ 'masculine', which are possible cognates (Ford 1998).

auxiliary. More importantly, the correspondences between the Ngty and the Mp PIs are erratic, in the sense that, while the majority of of the Ngty PIs correspond to the Mp PI Irrealis, there are some (e.g. in the 'go' auxiliary) for which the formal relationship is with the Mp PI Realis. The most economical explanation here is to propose that pSD did have the PI Realis/Irrealis split, as preserved in Mp. Ngty has maintained a PI Realis category, but it is usually formally encoded with the reflexes of the original PI Irrealis. And the functions of the pSD PI Irrealis have been taken over in Ngty by its general Irrealis category, cognate with the Mp Future. I will assume, then, in the reconstructions that follow, that pSD did have, at least for some auxiliaries, a Realis vs Irrealis contrast in the PI. The elimination of this formal opposition, however, in Ngty, together with the likelihood of innovations in Mp, means that paradigms for *both* the proto-Realis and proto-Irrealis for any one auxiliary cannot confidently be reconstructed.

Formally corresponding to the Ngty Irrealis neutral and Irrealis undesirable are the Mp Future Realis (FR) and Future Irrealis (FIrr) respectively. The Future Irrealis covers future negatives and hypotheticals. Like the Ngty 'undesirable' it is subject restricted, applying in Mp only to third person subjects. There are clear semantic links between the Ngty undesirable and the Mp F Irr, the Ngty category representing a narrowing down or specialisation of the Mp one. Again here it is likely that the Mp system is more conservative, with the changes in Ngty amounting to a generalisation of Irrealis, based on the original Future Realis forms, as more of a unified category, and subsuming all the functions of the original Future Realis, the original PI Irrealis as well as some of the functions of the original Future Irrealis.

Finally, Mp has, like Ngw, a combined Realis Present + Realis Past Perfective category. And like both Ngty dialects it has a subcategory of this that is restricted to third person subjects. This auxiliary mode is employed for making statements about the existence of entities in particular locations, and is available only to intransitive auxiliaries. As with the Ngty 'remote', this existential marking is effected via a change in form of the subject pronominal, the form of this marking being effectively identical with that in Ngty. A semantic link between the Ngty 'remote' and the Mp 'existential' is clearly plausible,[16] though not transparent, but given their striking similarities in respect of form and restriction to third subjects and mainly intransitive auxiliaries we can safely allow the two subcategories to be considered potential cognates. The semantics of their parent form in pSD remains to be determined.

These correspondences between Mp and Ngty auxiliary encoded TAM categories are summarised below. Unfortunately, the evidence that we are able to examine in this paper is inconclusive about the existence of distinct Past Perfective and Present categories in the immediate proto-language. The Mp Pr/PP marking corresponds to that of the Ngw Pr. For the relatively regular /nj/ of the Ngw PP there appears to be no Mp cognate. What we can reconstruct, then, is a pSD category that certainly had Present tense functions, and may have also have encoded Past Perfective. Without recourse to wider comparative data we cannot tell whether the marking of the PP with /nj/ in the auxiliary was a Ngw innovation, or whether pSD had a /*nj/ PP morpheme which was somehow lost without trace in Mp, and in Ngk was made homorganic, collapsing it with the Pr marker. We shall not investigate this complex issue here. Rather we shall allow the clear, uncontroversial features of pSD to emerge by proceeding immediately to some auxiliary reconstructions.

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16 Reid (pers. comm.) has suggested that verb-based place names in Ngty indicate at least an historic, if not synchronic, 'existential' function to the 'remote' category in that language.

Table 7: Corresponding TAM categories in Ngty and Mp auxiliaries

Ngan'gityemeri	*Murrinh-patha*
Irrealis (neutral)	Future Realis
Irrealis (undesirable)	Future Irrealis
Present (neutral)	Present/Past Perf (neutral)
Past Perf	*no cognate in Mp*
Present/Past Perf (remote)	Present/Past Perf (existential)
Past Imperf	Past Imperf Realis – Past Imperf Irrealis

3 Proto Southern Daly auxiliary reconstructions

From the total set of SD verbal classifiers, the 31 in Ngty and the 35 or more in Mp, we can establish correspondences enabling us to readily reconstruct at least partial paradigms for a set of 18 auxiliaries in pSD.[17] Some of the Ngty and Mp auxiliaries, including those for which comparative data has been available for almost two decades, are in fact so strikingly alike, and their reconstruction at the pSD level so uncomplicated, that one must wonder why the true genetic status of these two languages has remained undocumented for so long. Such, one supposes, is the power of crudely interpreted lexicostatistics to block the path of historical linguistics. In the space available here we cannot of course exhaustively discuss even all of the straightforward reconstructions. What I shall do in this section, then, is present a selection of the comparative data that, while unequivocally consistent with a close genetic linkage between Mp and Ngty, both exemplifies general trends in the development of the two SD branches and illustrates some of the difficulties in, and constraints on, the reconstruction process. Note that we shall be engaged here in a 'bottom-up' reconstruction of pSD, that is, employing SD-internal evidence to reconstruct the immediate ancestor of Mp and Ngty, and not drawing on data from other languages — with all the *presumptions* of subgrouping that that might carry — to shape our picture of pSD.

3.1 'sit' auxiliary, past imperfective

Both Mp and Ngty have a low-transitive 'sit' auxiliary which classifies the subject of the verb as being in a sitting-type posture. The Past Imperfective paradigms of this auxiliary are given in Table 8. Observe that the Ngw and Ngk forms are identical, while Mp has just the one paradigm, covering both irrealis and realis PI functions. Atypically, no AVR is systematically identifiable for this auxiliary in either Mp or Ngty,[18] both languages attesting to a historical structure as given simply in (3):

(3) [Stem + (Number ns-nInc)]Subject Pro + TAM.

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17 A further 10 pSD classifiers can be inferred from the comparative Ngty-Mp data, though their reconstructions are somewhat more problematic (Green 1995).

18 The form /ni/, of course, is found widely in northern Australia as the stem for 'sit', but synchronically, as even a brief inspection of the Mp and Ngty auxiliary paradigm inventories will reveal, the /ni/ here has to be analysed as the TAM marker; it cannot be plausibly segmented as the AVR. Historically also the /ni/ here is most certainly a reflex of a TAM marker rather than the 'sit' AVR, with the /*ni/ 'sit' stem having been eliminated from the paradigm prior to pSD.

The reconstruction of a single proto-PI for this auxiliary is for the most part unproblematic:

Table 8: SD and pSD: 'sit' Auxiliary, Past Imperfective[19]

	Ngw	Ngk	Mp	pSD PI
1sg	*ngi -ni*	*ngi -ni*	*ngi -ni*	**ngi -ni*
2sg	*yi -ni*	*yi -ni*	*thi -ni*	**THi -ni*
3sg	*di -ni*	*di -ni*	*di -ni*	**di -ni*
1Inc	*ngindi -ni*	*ngindi -ni*	*thi -ni*	**?*
1Edl	*ngi -n -ne*	*ngi -n -ne*	*nga -rri -ne*	**nga -rri -ne*
2dl	*yi -n -ne*	*yi -n -ne*	*ni -rri -ne*	**ni -rri -ne*
3dl	*wi -n -ne*	*wi -n -ne*	*pi -rri -ne*	**Pi -rri -ne*
1Epl	*ngi -n -ni*	*ngi -n -ni*	*nga -rri -ni*	**nga -rri -ni*
2pl	*yi -n -ni*	*yi -n -ni*	*ni -rri -ni*	**ni -rri -ni*
3pl	*wi -n -ni*	*wi -n -ni*	*pi -rri -ni*	**Pi -rri -ni*

SUBJECT STEMS. First exclusive is reconstructed as /*ngi/ in the singular, and /*nga/ in the non-singular. (The form /*ngi/ is implausible in the non-singular, since there would be no motivation, either phonological or analogical, for the change to /nga/ in Mp.) The /*nga/ form is preserved in Mp, but has become regularised to /ngi/ in Ngty. The Ngty pattern, violated only in two auxiliaries ('lie' and 'go along', where partial paradigm replacement has occurred), is for the subject stem vowels in all but the third person neutral to be identical in any given TAM category of an auxiliary. Thus /a/ here, the odd vowel out, has been regularised to /i/.[20]

First inclusive, however, cannot be reconstructed from this data. In fact, on the basis of SD internal evidence, first inclusive is not reconstructable for either the PI, PP or Pr of any auxiliary. In these TAM categories the Mp first inclusive is regularly based on, and in most cases is identical to, the second singular, while Ngty has a distinctive non-relatable form of general shape /ngVmbV/.[21] For the remaining TAM correspondence, the Mp Future <—> Ngty Irrealis, however, a first inclusive reconstruction is systematically possible. We will look at this in §3.5 below, where a speculative pSD PI and Pr-PP inclusive is also proposed.

The Ngty second person stem is /yi/; this corresponds to the Mp second singular /thi/ (phonetically [tji]). The two forms plausibly derive from the one ancestor, presumably a laminal obstruent which has lenited to an approximant in Ngty. But precisely what type of obstruent we should reconstruct is not clear, since pSD is likely to have had two manner

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19 In this, as in the following comparative paradigms, (1) the Mp 1Inc paucal SS, which is the same as the 1Exc plural, is not tabled in the Inclusive row, (2) 'dl' is an abbreviation for the Mp dual SS/paucal DS <—> Ngty dual/trial correspondence and will be referred to as the 'dual' category, and (3) 'pl' is an abbreviation for the Mp paucal SS/plural <—> Ngty plural correspondence and will be referred to as the 'plural'.

20 Just looking at this paradigm one might suggest that assimilation, of the vowel of the 1Exc non-singular subject stem to the following vowel, has played a part in this regularisation process. But such assimilation cannot be proposed generally for the development of the Ngty paradigms.

21 Note that the inclusive /ngindi-ni/ here is putatively synchronically derivable from a more regular underlying /ngimbi-ni/ via assimilation of the /mb/ to the apical of the following syllable (Reid 1990:116–118).

series for the laminal obstruents (either voiceless stop vs voiced stop, or, like modern Ngty, voiceless stop vs fricative) in word-initial position. This contrast has been largely merged in Mp, which, except for a few odd items with an initial voiced laminal stop, has only the voiceless laminal word-initially. Either laminal obstruent of the proto-language could have been the source for the lenited Ngty form. I indicate this indeterminacy in the reconstruction by writing the consonant of the proto second singular subject stem with capital letters as /*TH/.[22]

In the second non-singular Ngty again has /yi/ while Mp has /ni/. There are two simple ways of accounting for this: either Ngty extended the original second singular stem to the non-singular, eradicating a /*ni/, or Mp innovated a non-singular /ni/, replacing an original /*THi/ stem invariant for number. While both accounts are plausible, the former is more likely. Only the bound subject pronominals of Ngty have this identity of second singular and non-singular stems. In all other pronominal paradigms these stems are different, and in all but the Ngk non-subject bound pronouns, which nonetheless have an apical-initial /dV/, the second non-singular stem is /nV/. (This is illustrated in the free-form pronouns in Table 2 above.) Considering the array of second singular marking, then, the innovator in the subject pronouns would appear to be Ngty rather than Mp. Consequently /*ni/ is reconstructed as the second non-singular stem here.

The third singular stems here are identical, and /*di/ is the only candidate for the proto-form. As we shall see below in §3.4, third singular subjects in the PI and Pr-PP do not always match up so neatly in individual auxiliaries, but auxiliary-wide comparison enables us to match the overall **set** of third singular stems in Ngty with the overall *set* of third singular stems in Mp; this is suggestive of some free variation in options for this marking in the proto-language.

For the third non-singular we have a correspondence between Mp /p/ and Ngty /w/, both presumably deriving from a pSD bilabial obstruent. The problem here is similar to that with the second singular subject stem. That is, pSD could well have had a word-initial bilabial voiceless stop vs fricative contrast which has been lost in Mp, where /*f/ and /*p/ have merged to /p/. If this is the case, then either /*f/ or /*p/ could be the source of the initial /w/ in the Ngty third non-singular stem. There appears to be no data in the SD languages, either in grammatical morphemes or among the lexical cognates, which conclusively determines which of /*p/ and /*f/ is the better reconstruction here. Consequently, analogously with the second person, I use a capital letter, /*P/, to indicate the indeterminacy in the reconstruction.

SUBJECT NUMBER. This is one of only four auxiliaries[23] in Mp in which there is an /rrV/ syllable corresponding to the Ngty (non-inclusive) non-singular marker. As remarked in §2.1, the general form of the Ngty number marker is /rr(V)/. Here it appears as a single

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22 I shall represent the laminals of pSD with dental symbols, consistent with Street's (1987) practice for contemporary Murrinh-patha. Note that there is no evidence at all within the data surveyed here for reconstructing a pSD dental vs palatal opposition. It should also be observed that my proposal of lenition of the /*TH/ is not supported by the scraps of evidence we have from the SD lexical cognate set. Though this contains only a few instances of laminals these are more consistent with /*th/ and its contrasting laminal, fricative /*sh/ or perhaps stop /*dh/, being maintained as obstruents in Ngty. It appears, then, that the second-subject stem lenition is peculiar to the auxiliary, possibly arising through localised phonological processes, or through analogy, for example with the third person (as discussed below).

23 The four are: the low-transitive 'sit' and 'lie', and two high-transitives which Street refers to as verb classes '19' and '20'.

consonant, assimilating in manner to the following nasal. This assimilation of the number marker /rr/ to a following apical stop or nasal is a synchronically regular process (Reid 1990:119–122). Whether the number marker appears in Ngty, however, as /rr/ or /rrV/ is not synchronically fully predictable; this has to be considered from an historical perspective in each individual paradigm, since the general evidence suggests that the Ngty data reflects some inconsistency in this respect in the proto-language. In the case of the 'sit' PI the Mp forms lead us unequivocally to a reconstruction of /*rri/ for the number marker, with both vowel reduction and manner assimilation taking place in the evolution of the Ngty forms.

TAM/'DUAL'. The languages have identical TAM/Number morphemes in this paradigm. Clearly /*ne/ is the proto-PI for the 'dual' here, and /*ni/ the proto-PI for all other subject numbers. Note that this method of marking the 'dual' by variation of the TAM vowel is common, though by no means fully predictable, in the Mp PI. But it is quite irregular in Ngty, where it is found in only six auxiliaries ('sit', 'lie', 'go', 'go*', 'poke' and 'slash').

3.2 'raised' auxiliary, past imperfective

Ngty has a low-transitive auxiliary which classifies the subject of the verb as being in a type of raised, perched position; Reid refers to this as the 'hang' auxiliary (Reid 1990:238). Formally corresponding to Ngty 'hang' is a Mp auxiliary referred to by Street (1987:83) as the 'being aloft' auxiliary, which classifies its subjects as being raised in the air (Walsh pers. comm.). The Ngty 'hang' and Mp 'being aloft' classifiers thus share the feature of describing their subjects as in some way raised up, and we can, given their close formal resemblance, reconstruct for them a single pSD progenitor. The relevant PI paradigms are given in Table 9.

Table 9: SD and pSD: 'raised' auxiliary, past imperfective

	Ngw PI	Mp PI Irr	Mp PI Realis	pSD pPI Irr
1sg	*ngi -njtji -nge*	*ngi -nhtha -ngi*	*ngi -nhtha -nhi*	**ngi -nhtha -ngi*
2sg	*yi -njtji -nge*	*thi -ntha -ngi*	*thi -ntha -nhi*	**THi -nhtha -ngi*
3sg	*wi -njtji -nge*	*pi -nhtha -ngi*	*pi -nhtha -nhi*	**Pi -nhtha -ngi*
1I	*ngimbi -njtji -nge*	*thi -nhtha -ngi*	*thi -nhtha -nhi*	**?*
1Edl	*ngi -rr -tji -nge -gu*	*ngi -nhtha -nge*	*ngi -nhtha -nhe*	**ngi -rr -nhtha -nge*
2dl	*yi -rr -tji -nge -gu*	*ni -nhtha -nge*	*ni -nhtha -nhe*	**ni -rr -nhtha -nge*
3dl	*wi -rr -tji -nge -gu*	*pi -nhtha -nge*	*pi -nhtha -nhe*	**Pi -rr -nhtha -nge*
1Epl	*ngi -rr -tji -nge*	*ngi -nhtha -ngi*	*ngi -nhtha -nhi*	**ngi -rr -nhtha -ngi*
2pl	*yi -rr -tji -nge*	*ni -nhtha -ngi*	*ni -nhtha -nhi*	**ni -rr -nhtha -ngi*
3pl	*wi -rr -tji -nge*	*pi -nhtha -ngi*	*pi -nhtha -nhi*	**Pi -rr -nhtha -ngi*

Mp has both a realis and irrealis PI, formally distinguished only through the nasal of the TAM marker. For Ngty we have data only from the Ngw dialect; Reid provides no forms for Ngk. The sole Ngw paradigm corresponds to the Mp irrealis. The pPI Irrealis is then reconstructed as follows:

SUBJECT STEMS generally conform to the pattern of the 'sit' PI above, with the third singular showing the same correspondence as we saw in the third non-singulars above, and being reconstructed as /*Pi/.[24] The 1 Exc non-singular here, however, must be reconstructed as /*ngi/, in contrast to the /*nga/ posited for the 'sit' PI.

SUBJECT NUMBER. Ngw has its regular /rr/, but no trace whatsoever of the morpheme is to be found in Mp, where the first singular and 1 Exc 'plural', as well as the third singular and third 'plural', have identical forms. So what we have to determine here is whether the number marker has been innovated in Ngty or dropped in Mp. We know, of course, from the 'sit' PI above, and from data such as that in the 'stand' PI that follows below, that /rr(V)/ cannot be entirely a Ngty innovation; an /rr(V)/ with non-inclusive non-singular number function was clearly present in the pre-history of Mp. In auxiliaries such as 'sit' that lack overt AVRs it has been preserved intact, at least when prior to particular TAM morphemes. And, as we shall see, it has left its fingerprints in auxiliaries with apical-initial AVRs, having triggered phonological change in those segments. But if the number marker was not entirely a Ngty innovation it could still have been regularised in Ngty; that is, the question still remains as to whether we can reconstruct the number marker for all pSD auxiliaries, or whether we posit it as irregular in pSD, confining it just to those proto-auxiliaries for which it is reflexed in Mp. The weight of evidence here is overwhelmingly in favour of the hypothesis of a regular distribution of the proto-number morpheme. For example, the auxiliaries with reflexes of /*rr(V)/ in Mp make up no coherent semantic subset(s); equally there appear to be no formal or phonological factors that would make sense of a limited distribution for the number morpheme in pSD auxiliaries. Further, we can identify factors in Mp that could conceivably work together to reduce the regularity of number marking. Such factors include: the operation of phonological processes which effectively blend the /rr/ with a following apical, and the general drive in Mp to a morphologically more compact and less agglutinating auxiliary structure.

Consequently, I reconstruct regularly distributed number marking for pSD. And I suggest that a major plank in Mp's rationalisation of auxiliary structure was a rule that deleted /rr/ number markers prior to AVRs. This rule arose at a relatively late stage, so that the /rr/s that it applied to were just those reflexes of the number marker that survived the /rr/ + apical blending processes unaffected. I will illustrate this further in the discussion of the 'stand' PI in §3.3 below.

Note that there is no assumption that the number marker was uniformly syllabic in the proto-language. The procedure I've adopted for reconstructing its form is to posit a syllabic /*rrV/ only where it is preserved as such in at least one of the pSD daughters; otherwise a monosegmental number marker has been assigned to the proto-paradigm. This procedure is designed to establish what degree of uniformity is in fact properly motivated by the data, and to determine the minimal set of /*rrV > rr/ reduction rules necessary to account for the development of Ngty and Mp from pSD. Thus for this paradigm I propose /*rr/, as opposed to the /*rri/ of the 'sit' PI.

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[24] I argue in Green (1995) that the NgTj /wV/ <—> Mp /pV/ correspondence in third singular PI and Pr-PP subject stems could in fact be the reflex of either just /*PV/ or a /*PV ~ *wV/ variation. Since the data that supports this claim cannot be canvassed within the limitations of this this paper I will ignore this additional complication here.

AVR. The Mp AVR is /nhtha/ throughout. Ngty has /njtji/ in the singular and inclusive. By virtue of a synchronically active rule of triconsonant cluster reduction (Reid 1990:80), which eliminates the central member of impermissible CCC sequences, this is reduced to /tji/ following /rr/ in the remainder of the paradigm. I reconstruct the pAVR as /*nhtha/. The Ngty AVR is then not derived phonologically, but through regularisation of AVR shape. That is, considering the Pr-PP and Future/Irrealis correspondences for this auxiliary we find that Ngty consistently has /i/ as its AVR vowel, while Mp has /i/ in the Pr.PP but /a/ in the Future. The difference in vowel shape in Mp between the Pr.PP and the other TAM categories is not explicable; it is not part of a systematic innovation in Mp, and there appear to be no local phonological or other factors that would account for a one-off vowel change in this auxiliary. The only conclusion is that Mp reflects the proto-system, preserving the vowel-marked AVR allomorphy of pSD. Ngty, however, has opted for a single AVR shape across all TAM categories, selecting the pSD high-vowel-final allomorph for its sole form. This is not an ad-hoc proposal; it can be postulated as a regular development across the Ngty auxiliary system.

TAM/'DUAL'. Mp has /ngi/ in the singular and 'plural', and /nge/ in the 'dual'. Ngty, however, has /nge/ throughout, the Ngty dual instead being marked by the synchronically more regular strategy of suffixing /gu/ to the auxiliary. The simplest reconstruction here has Mp as preserving the proto-system. 'Dual' marking through final-vowel change is not predictable in Mp, and occurs in less than half of the auxiliaries. And it is restricted to the PI and Future; in the Pr-PP 'dual' marking is regularly effected by suffixation of /ka/. We know from the evidence of the Ngty 'sit' auxiliary above that the 'dual' vowel inflection is not in itself a Mp innovation; further, we have no basis for supposing it has spread in any ordered fashion in Mp from just a few auxiliaries in pSD. The distribution of 'dual' strategies in Mp rather appears to be a direct reflection of the situation in pSD. Ngty then has preserved the 'dual' vowel inflection in the PI and Irrealis of just a few auxiliaries. Note that these Ngty conservative auxiliaries constitute a phonologically constrained set, with the vowel inflection preserved only following an apical consonant. Following other consonants the vowel inflection has been eradicated, and 'dual' marking achieved instead by suffixation of /gu/. This form is cognate with Mp /ka/; their parent morpheme, /*gu/, is attributable to pSD only in the pPr. In making its 'dual' marking more regular Ngty has extended the suffix into the other TAM categories. In the case of the PI form of Ngty 'hang', eradication of the original vowel inflection has apparently been facilitated by independent phonological processes, since pSD auxiliary-final /*ngi/ is elsewhere realised in Ngty as /nge/. (Auxiliary-final pSD /*ngi/ > Ngty /nge/, for example, is evident in the 'stand' PI, where the reconstruction is not complicated by considerations of 'dual' vowel inflection.)

3.3 'stand' auxiliary, past imperfective

Mp and Ngty each have a low-transitive auxiliary which classifies the subject as 'standing'. In the PI, Mp has both Realis and Irrealis paradigms. Again it is the Irrealis that corresponds formally to the Ngty PI, enabling us to reconstruct the pSD 'stand' PI Irrealis.

SUBJECT STEMS are reconstructed as per §3.1 and §3.2 above.

SUBJECT NUMBER and AVR. Confining ourselves for the moment to the singular we see that the Mp paradigm gives /rra/ as the candidate for the historic AVR, while the Ngty PI offers /rri/. Now, as with its 'be aloft' auxiliary, Mp has for its 'stand' classifier two AVR

allomorphs which differ only in their final vowel; /rra/ is found in the Future and PI irrealis modes, while /rri/ appears in the Pr.PP and the PI realis. Ngty, on the other hand, has /rri/ throughout the singular in all TAM categories. Applying the same arguments employed in the discussion of the 'hang' PI AVR, I therefore propose /*rra/ as the AVR for the singular pPI Irrealis. The proto-AVR allomorphy has been eliminated in favour of the high vowel variant in Ngty.

Table 9: SD and pSD: 'stand' auxiliary, past imperfective

	Ngw PI	Ngk PI	Mp PI Irr	Mp PI R	pSD PI Irrealis
1sg	*ngi-rri-nge*	*ngi-rri-nge*	*ngi-rra-ngi*	*ngi-rri*	**ngi-rra-ngi*
2sg	*yi-rri-nge*	*yi-rri-nge*	*thi-rra-ngi*	*thi-rri*	**THi-rra-ngi*
3sg	*wi-rri-nge*	*wi-rri-nge*	*pi-rra-ngi*	*pi-rri*	**Pi-rra-ngi*
1 Inc	*ngimbi-di-nge*	*ngimbi-rri-nge*	*thi-rra-ngi*	*thi-rri*	*?
1 Edl	*ngi-d-di-nge-gu*	*ngi-rr-si-nge-rrki*	*ngi-ra-ngi*	*nge*	**ngi-rr-rra-ngi-rrki*
2dl	*yi-d-di-nge-gu*	*yi-rr-si-nge-rrki*	*ni-ra-ngi*	*ne*	**ni-rr-rra-ngi-rrki*
3dl	*wi-d-di-nge-gu*	*wi-rr-si-nge-rrki*	*pi-ra-ngi*	*pe*	**Pi-rr-rra-ngi-rrki*
1 Epl	*ngi-d-di-nge*	*ngi-rr-si-nge*	*ngi-ra-ngi*	*ngi*	**ngi-rr-rra-ngi*
2pl	*yi-d-di-nge*	*yi-rr-si-nge*	*ni-ra-ngi*	*ni*	**ni-rr-rra-ngi*
3pl	*wi-d-di-nge*	*wi-rr-si-nge*	*pi-ra-ngi*	*pi*	**Pi-rr-rra-ngi*

The non-singulars in Ngty also attest to an historic /*rrV/ AVR shape, the initial consonant of the AVR having been affected differently in each dialect by the preceding /rr/ number marker. In Ngk the /*rr-rrV/ has become /rr-s/, while in the Ngw dialect it is reflexed as /d-d/. The Ngw /d-d/ most likely comes about via an intermediate stage of /rr-d/. An /rr-d —> d-d/ step in Ngw is in keeping with a general diachronic rule for the evolution of pNgty from pSD. This rule assimilates number morpheme /rr/ to the manner of a following apical stop or nasal (as in the 'sit' PI in §3.1). We can propose, then, that the /*rr-rrV/ sequence of the pSD 'stand' PI became /*rr-sV/ in Proto Ngty. In Ngk this has been preserved, while in Ngw the /s/ has hardened to a stop /d/, triggering assimilation in the preceding /rr/.[25] 'Stand' is the only auxiliary in Ngty that evidences an ancestral /*rr-rr/ sequence; except for the assimilation these are then ad-hoc Ngty developments.

The positing of an historic /*rr-rrV/ sequence also accounts neatly, and systematically, for the change in shape of the AVR in the Mp non-singular non-inclusive, if we allow that diachronically /*rr-rra/ has been reduced in Mp to /ra/. Such reduction could be effected via an intermediate stage of /rr-ra/. This proposed reduction is a regular process in the development of Mp. All three Mp auxiliaries with /rrV/ AVRs in the singular and inclusive have, where they are not deleted by other processes, /rV/ AVRs in the non-singular non-inclusive. Thus we have:

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25 An alternative proposal would be to suggest /*rr-d/ for pNgty. This would then lenite to /rr-s/ in Ngk, but assimilate to /d-d/ in Ngw. We need not canvass the pros and cons of this quite plausible alternative, since it does not impact critically on our reconstruction of pSD. Note that Ngw has, in an apparently ad-hoc move, extended the /di/ AVR allomorph formed by the assimilation to its inclusive, replacing the earlier /rri/. While this takes place in all TAM categories of 'stand', such extensions are not a regular feature of either Ngw or Ngk auxiliary development, where the inclusive more typically remains patterned with the singulars in respect of AVR shape.

Table 10: Mp /rrV/ and /rV/ AVR allomorphy

	2nd singular	2nd 'dual'	2nd 'plural'
'stand' Future	*thi -rra*	*ni -ra*	*ni -ra*
'slow movement' Future	*thu -rru*	*na*	*nu -ru*
'see' (Verb Class#28) PI Realis	*thi -rra*	*ni -ra*	*ni-ra*

Further, this reduction of /*rr-rrV/ in Mp is consistent with the fate of the /*rr-nV/ sequences that we reconstruct for the pSD auxiliary. These /*rr-nV/ clusters are reflexed in Mp as /rnV/. That is, the nasal becomes postalveolar and the /rr/ is dropped.[26] This is illustrated in Table 11, where the /nV/ of the 'be' auxiliary is the AVR, and the /nV/ of the 'strike' auxiliary is the TAM:

Table 11: pSD /*rr-nV/ > Mp /rnV/

	2nd singular < *Subj *-ni*	2nd 'dual' < *Subj *-rr -ne*	2nd 'plural' < *Subj *-rr -ni*
'be' Future	*tha -ni*	*na -rne*	*na -rni*
'strike' (Verb Class#23) PI Realis	*thu -ni*	*nu -rne*	*nu -rni*

These /*rr-rr/ and /*rr-n/ sequences are the only /*rr-[+Alveolar]/ clusters that we are obliged to reconstruct for the proto-auxiliary. Presuming that the rhotics constitute a phonological class in Mp, i.e. that /rr/ is [+rhotic, +anterior] and /r/ is [+rhotic, -anterior],[27] we can see that these two sequences follow the same path of development into Mp, viz.: the second alveolar consonant is reflexed as its non-anterior (i.e. postalveolar) counterpart, and the /rr/ is deleted. The diachronic rule can then be written as (4):

$$(4)\quad pSD\quad *rr\quad \begin{bmatrix} C \\ +\text{Apical} \\ +\text{Anterior} \end{bmatrix}\quad >\quad Mp\quad \begin{matrix} C \\ [\,-\text{Anterior}\,] \end{matrix}$$

This rule can in fact have a less specific input, since all pSD /*rr-[+Apical]/ clusters, not just the /*rr-[+Alveolar]/ subset, conform to it. For /*rr-[+Postalveolar]/ sequences the part of the rule that specifies a non-anterior output applies vacuously, for example:

Table 12: pSD /*rr-[+Postalveolar]V/ > Mp /[+Postalveolar]V/

	3rd singular < *Subj -Ci	3rd 'dual' < *Subj -rr -Ce	3rd 'plural' < *Subj -rr -Ci
'be' PI Realis	*ka -rdi*	*ka -rde*	*ka -rdi*
'be' PI Irrealis	*ka -rni*	*ka -rne*	*ka -rni*

26 Heath (1978:61) reports the same process of /rr-n —> rn/ synchronically for the eastern Arnhem language Nunggubuyu.

27 Note that Dixon (1980:189) proposes a feature [±rhotic] to distinguish /rr/ and /r/ generally for Australian languages.

Thus the rule can be written more generally as:

(5) *pSD* *rr [C +Apical] > *Mp* [C -Anterior]

I must observe, of course, that the /*rr-rr/ cluster that I propose for pSD is phonotactically odd by the standards of almost any modern Australian language. However, the evidence for its reconstruction here is quite compelling. And it must be remembered that what we are reconstructing are phonological representations, not surface realisations; many different sorts of realisation strategies (e.g. with epenthetic vowels, or as stops) may have been applied to this cluster by pSD speakers. Note that we cannot let ourselves off the hook of this awkward looking reconstruction by proposing that the subject number morpheme be universally reconstructed as /*rrV/. The price of such a smoothing out of the proto-language would be a loss of explanatory power. For example, we would then have to reconstruct both the '*sit' PI and the '*strike' PI (see Table 11 above) with syllabic number markers, e.g. with second person 'plurals' /*ni-rri-ni/ and /*nu-rrV-ni/ respectively. But we would then not be able to explain why the '*strike' sequence is reduced in Mp to /nu-rne/, but the '*sit' sequence is maintained. On the other hand, by reconstructing for '*sit' a syllabic number marker, which does not reduce to /rr/ and does not blend with the following apical, and for '*strike' a monosegmental number morpheme, which does blend with the following /n/, the Mp forms can be accounted for. In §3.5 we shall consider further data indicating that the number marker was not uniform in shape in pSD, and that it had already undergone in a number of auxiliaries assimilation in manner to the following consonant. Presumably, all the pSD variants of the number marker descend from an ancestral syllabic /*rrV/. Perhaps internal reconstruction of pSD, together with data from its close genetic relatives, if indeed there prove to be any, may verify this. But as a general methodological principal we should not allow our picture of the proto-language to be corrupted by our hopes of what internal or higher-level reconstruction might reveal.

TAM and DUAL. In the singular and plural Ngty /nge/ corresponds to Mp /ngi/. This is the same correspondence as in the 'raised' PI, and /*ngi/ is again reconstructed here. But in the dual there are some irregularities. Ngw has TAM /nge/ here, followed by the regular /gu/ dual; on the basis of the 'raised' PI we might expect to find a corresponding /nge/ in the Mp dual (i.e. with Ngw having merged the TAM encoded dual/plural contrast). However, Mp instead has /ngi/, the TAM marker, and indeed the whole auxiliary, being identical with the plural. And to further complicate the picture Ngk has the same TAM morpheme as Ngw, namely /nge/, but suffixes to this a suppletive dual marker, /rrki/. This occurs in no other auxiliary as a dual-subject morpheme, but it is the dual suffix that attaches to the bound non-subject stems that can appear in the auxiliary-final slot (Reid 1990:126).

For the TAM marker we must reconstruct /*ngi/. This is preserved in Mp, and becomes /nge/ in Ngty via a regular rule. (The only alternative here is to reconstruct /*nge/, and to posit a change to /ngi/ in Mp. This would be an ad-hoc and unmotivated change, and this alternative is therefore rejected.)

I thus propose that the proto-paradigm had no TAM encoded dual/plural distinction; the question that remains is whether this distinction was made in pSD with some separate following dual suffix. The only candidates for such a suffix are /gu/ (<*ga) in Ngw and /rrki/ in Ngk. /gu/ is unlikely, since its appearance in the Ngty PI can be accounted for as an

extension from the Pr-PP, but it is possible that /rrki/ is a retention of an archaic and probably irregular dual affix. This awaits further comparative investigation.

3.4 'lie' and 'take' ('carry') auxiliaries, present

Turning to the Present-Past Perfective, we find, in paradigm after paradigm, the same striking resemblances as for the Past Imperfective, resemblances that can be explained only as the result of a shared genetic legacy from pSD. In this section we will illustrate by looking briefly at reconstructions for the '*lie' and '*carry' auxiliaries of the proto-Present, the only TAM category we can readily reconstruct from the Pr and PP correspondences.

3.4.1 'lie'

The Mp and Ngty 'lie' auxiliaries have virtually identical semantic functions, both classifying the subject of the verb as being in a lying position. As shown in Table 13, they show full formal correspondences only in the singular, and only a partial reconstruction of the proto-Pr is possible. In the non-singular non-inclusive the Ngty and Mp paradigms are not relatable. The Mp forms here are identical to those of the 'sit' auxiliary Pr.PP (Street 1987:81). In fact, the Mp 'sit' and 'lie' auxiliaries are consistently collapsed throughout the non-singular non-inclusive for all TAM categories. In the PI and Pr.PP it is clearly the original '*sit' forms, cognate with the contemporary 'sit' forms in Ngty (see §3.1), which have survived this collapse, ousting the original '*lie' non-singular non-inclusive.[28] Whether the Ngty non-singular non-inclusives here then reflex ancestral '*lie', or perhaps some other pSD auxiliary, or perhaps rather constitute a Ngty innovation, remains to be seen; this cannot be determined on the basis of the evidence we survey here.

Table 13: SD and pSD: 'lie' Auxiliary, Present (+Past Perfective)

	Ngw Pr	Ngk Pr.PP	Mp Pr.PP	pSD Pr
1sg	*ngi -be -m*	*ngi -be -M*	*nga -bi -m*	**nga -bi -m*
2sg	*yi -be -m*	*yi -be -M*	*thi -bi -m*	**THi -bi -m*
3sg-a	*wi -be -m*	*wi -be -M*	*yi -bi -m*	**yi -bi -m*
3sg-b	*gi -be -m*	*gi -be -M*	*ka -bi -m*	**ga -bi -m*
1Inc	*ngimbi -be -m*	*ngimbi -be -M*	*thi -bi -m*	**?*
1Ens	*nge -rri -njtje -m -(gu)*	*nge -rr -tje -M -(gu)*	*nga-rri-m -(ka)*	**?*
2ns	*ye -rri -njtje -m -(gu)*	*ye -rr -tje -M -(gu)*	*ni -rri -m -(ka)*	**?*
3ns-a	*we -rri -njtje -m -(gu)*	*we -rr -tje -M -(gu)*	*pi-rri -m -(ka)*	**?*
3ns-b	*ge -rri -njtje -m -(gu)*	*ge -rr -tje -M -(gu)*	*ka -rri -m -(ka)*	**?*

a = NgTy neutral, Mp neutral b = NgTy 'remote', Mp 'existential'

SUBJECT STEMS in the Pr-PP are reconstructed by the same principles as for the PI, with the Pr-PP, unfortunately, offering no further insight into the prehistory of the inclusive. Universally in the Pr.PP, as in the PI, the distinctive (underlying) /ngVmbV/ of Ngty lines up

28 Absences of correspondences with Ngty, however, prevent us from determining whether the same displacement took place in the Mp future category, and its prehistory remains obscure.

against a Mp inclusive which is either identical to the second singular or closely formally related to it. As we have noted in §3.1 above, no conclusions about a pSD inclusive auxiliary can be drawn from this.

The only additional complication in the Pr-PP is the separate 'remote' — 'existential' third person form (i.e. the '3sg-b' row in the table above). This discrete form is found in all Mp and Ngty low-transitive auxiliaries, and additionally in the Ngty high-transitive 'say', 'hands' and 'feet' auxiliaries. The 'existential' subject stem in Mp is invariably /kV/, and in Ngty is invariably /gV/, and can be reconstructed generally for pSD as /*gV/.[29] Further, the two languages have the common feature that the RE auxiliary as a whole patterns with the first Pr-PP, the only difference between the two being the initial consonant; the first singular is /ng/ initial, while the RE has an initial velar stop. This can be seen clearly in the Mp column of Table 13. The first singular is /nga-bi-m/, while the existential singular is /ka-bi-m/. And the first exclusive non-singular is /nga-rri-m-(ka)/ while the existential non-singular is /ka-rri-m-(ka)/. Observe that we analyse the patterning here as being with the first, rather than the second or third, person because of the distinctive /a/ subject stem vowel.[30] Looking beyond the paradigm in Table 13, there is only one exception to this 1st-RE patterning principle. This is in the singular Pr.PP of the Ngw 'go along' auxiliary, where the first person is /nge-rri-mbin/ and the RE is the irregular /ga -ganjtjerri/. It is likely that this irregularity has arisen in Ngty as a result of conflation into the one 'go along' paradigm of several different auxiliaries, each with a distinct AVR. We can take it then that this 1st-RE structuring pattern was a feature of the pSD Present. That is, it is implausible either that this patterning evolved independently in each language, or, given the lack of evidence of diffusion in the lexicon and non-verbal grammar, that it was borrowed from one language into the other.[31]

We also have to deal here with the discrepancy between the subject stems in the third singular neutral, where Mp has /yi/ but Ngty has /wi/. The most likely ancestral form here is the Mp stem. Both Ngty and Mp have a few instances of a /yV/ subject form scattered through their auxiliaries. No /yV/ initial auxiliary corresponds directly to a /yV/ initial auxiliary in the other language, but the /yV/s are nonetheless likely to be relics from pSD. They cannot be accounted for as coincidental phonological developments in each language, and neither language has any apparent pronominal, demonstrative or other source for a /yV/ bound subject stem. Further, if we take /*yi/ as the pSD third singular stem here, we can observe that, if maintained into Ngty, it would fall together with the second singular /yi/,

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29 See Green (1995) for discussion of the Mp #k <—> Ngty #k, #g correspondences. In brief, /*g/ rather than /*k/ is reconstructed here on the hypothesis that Ngty has preserved, at least to some degree, a limited /#*k/ vs /#*g/ opposition which has been neutralised to /#k/ in modern Mp.

30 Ngty is more regular than Mp in this respect, and the Ngty RE patterns equally well with the second as with the first singular Pr.PP. (It does not pattern with the third person neutral, though.) According to the reconstructions argued for here, the patterning with the second persons results from Ngty regularisations, and is not to be attributed to pSD.

31 We do not have the space here to discuss the probable distribution of the RE as a separate category in pSD. We can be sure that it was found at least throughout the low-transitives, since it is maintained in the low-transitives in both Mp and Ngty. In all probability it was also found, as in modern Ngty, in a few pSD high-transitive auxiliaries; that is, it appears that in pSD that this was a category which was in the process of being eliminated from the high-transitives. There is no reason to suppose, on the basis of the Mp and Ngty evidence, that it was found regularly across the pSD high-transitives.

lenited from /*THi/. This collapse has been avoided in Ngty by replacing the original, and irregular, /yi/ third singular with the more regular /wi/.

The remainder of the singular subject stems are reconstructed in the same way as for the 'sit' paradigm.

TAM. The /bV/ that follows the singular/inclusive subject stem here looks at first sight as if, consistent with the [Subject -AVR -TAM] pattern suggested above (§2) as typical for auxiliaries, it should be analysed as an AVR. In fact, the /bV/ is clearly, at least in historic terms, a TAM marker, augmenting the final nasal TAM morpheme. The /bV/, for example, is only found in the Pr-PP category. In the PI and Future/Irrealis it is nowhere to be seen, for example:

Table 14: Mp and Ngty 'lie'

	2sg Pr(/PP)	2sg PI (Irr)	2sg F/Irr
Mp	*thi -bi -m*	*thu -ngi*	*thu*
Ngty	*yi -be -m*	*yi -n*	*yi -m*

Further, in Ngty the /bV/ is found also in the 'stand' and 'hang' auxiliaries. Again for these auxiliaries it is confined to the Pr-PP, but it has the added feature of occurring after the AVR:

Table 15: Ngty 'stand' and 'hang'

	2sg Pr(/PP)	2sg PI (Irr)	2sg F/Irr
Ngw 'stand'	*yi -rri -be -m*	*yi -rri -nge*	*yi -rri -m*
Ngw 'hang'	*yi -njtji -be -m*	*yi -njtji -nge*	*yi -njtji -m*

In Mp /bV/ is also found in the 'stand' auxiliary, but is restricted to the non-singular of the Pr-PP. It is not found at all in Mp 'be aloft', which otherwise corresponds formally, in all TAM categories, to Ngty 'hang'. I argue elsewhere (Green 1995) that, given its irregularity in Ngty, the /bV/ should nevertheless be reconstructed as a suppletive TAM marker throughout the Pr paradigms of the pSD parents of these auxiliaries; its erosion in Mp is consistent with the general rules for auxiliary development in that language. Whatever the merits of those arguments we can be sure that what we have in front of us in the 'lie' Pr-PP is cognacy of a non-predictable and non-productive TAM augment. Could there be anything other than a genetic explanation for such a matching choice of irregularity?

I reconstruct the shape of this morpheme as /*bi/, and posit the vowel as lowered to /e/ in Ngty. This is consistent with the shift of pSD /*ngi/to Ngty /nge/ proposed for the 'raised' and 'stand' PI in §3.2–§3.3 above. The Ngty lowering, then, is conditioned phonologically by a preceding peripheral, and has thus far been constrained morphologically to TAM morphemes.

The final TAM morpheme is reconstructed as /*m/. As noted in §2, this has become an assimilating nasal in Ngk.

3.4.2 'carry'

Mp and Ngty each have a high-transitive auxiliary which classifies the verb as denoting a 'carrying' action. In Ngty this is referred to by Reid (1990:246) as the 'take' auxiliary, and in Mp it has been labelled by Walsh (1976:352) as the 'have' auxiliary.[32] Both Ngty 'take' and Mp 'have' are non-productive auxiliaries, able to co-occur with only ten or so main verb stems. 'Take' and 'have' correspond formally; the pSD auxiliary from which they both descend I will refer to as the '*carry' classifier.

Table 16: SD and pSD: 'carry'Auxiliary, Present (+Past Perfective)

	Ngw Pr	Ngk Pr.PP	Mp Pr.PP	pSD pPr
1sg	*nga-ganjtji-n*	*nga-gatji-M*	*nga-nhthi-n*	**nga-ganhthi-n*
2sg	*ya-ganjtji-n*	*ya-gatji-M*	*tha-nhthi-n*	**THa-ganhthi-n*
3sg	*ye-njtji-n*	*ye-tji-M*	*ka-nhthi-n*	**ya-nhthi-n*
1Inc	*nganggi-njtji-n*	*nganggi-tji-M*	*tha-nhthi-n*	**?*
1Ens	*nga-rr-ganjtji-n-(gu)*	*nga-rr-atji-M-(gu)*	*nga-nhthi-n-(ka)*	**nga-rr-ganhthi-n-(gu)*
2ns	*ya-rr-ganjtji-n-(gu)*	*ya-rr-atji-M-(gu)*	*na-nhthi-n-(ka)*	**na-rr-ganhthi-n-(gu)*
3ns	*wa-rr-ganjtji-n-(gu)*	*wa-rr-atji-M-(gu)*	*pa-nhthi-n-(ka)*	**Pa-rr-ganhthi-n-(gu)*

SUBJECT STEMS. Except for the third singular, which I consider below in conjunction with the AVR, subject stems are reconstructed unproblematically, following the pattern established in §3.1–§3.4.1 above. Note that neither language has a discrete remote–existential third singular form for this auxiliary.

SUBJECT NUMBER. While Ngty has /rr/, no corresponding morpheme is to be found in the Mp paradigm. This is the same situation that we dealt with in the PI of the '*raised' auxiliary (§3.2). In line with the discussion there, I reconstruct a /*rr/ number marker for this auxiliary, proposing that it has been deleted in Mp via a regular auxiliary-wide reduction rule which drops /rr/ number markers prior to AVRs.

AVR. Ngw has /ganjtji/ as its predominant AVR form, varying to /njtji/ in the third singular.[33] The Ngk AVR differs in two ways. Firstly, the nasal is absent from Ngk; this is consistent with a general (diachronic) trend in Ngk for reducing homorganic nasal-plus-stop clusters to voiceless stops. Compare, for example, the following Ngw and Ngk auxiliaries:

Table 17: Reduction of homorganic nasal–stop clusters in Ngk

	Go# 3sPr	Hang 3sPr	Slash 3sPr
Ngw	*yirrimbin*	*winjtjibem*	*wumbun*
Ngk	*yirripin*	*witjibeM*	*wupuM*

Secondly, the AVR has no initial /g/ in the Ngk non-singular non-inclusive, where it follows the /rr/ number marker. Presumably the /rr/ here has simply triggered deletion of the

32 Street (1987:91) provides no semantic label, referring to the auxiliary simply as 'Verb Class 22'.

33 Ignoring, of course, the inclusive, which we do not attempt to reconstruct here.

fricative /g/. This cannot be proposed as a fully regular rule for the development of Ngk, but it certainly is phonologically plausible, and, as Reid (1990:121) points out, there are several instances of sporadic deletion of fricatives and approximants following /rr/ in both dialects of Ngty. The Ngw and Ngk data, then, point to a reconstruction for pNgty of /*ganjtji/ as the main AVR form, with /*njtji/ as the third singular variant.

For Mp we have an AVR that appears synchronically as /nhthi/ throughout the paradigm. But there is one outstanding irregularity here: the /ka/ third singular subject stem. /kV/ is of course the regular third singular 'existential' Pr.PP subject stem, but as a neutral Pr.PP stem is found only in three Mp auxiliaries: 'have', 'be' and the auxiliary labelled simply as 'verb class 35'. While 'verb class 35' has no cognate in Ngty, Mp 'be' is cognate with Ngty 'go'. And this 'be' <—> 'go' correspondence mirrors the 'have' <—> 'take' correspondence in that the Mp /kV/ neutral *stem* appears (in the third singular Pr.PP) when Ngty has a /gV/ initial AVR (in other than the third singular Pr.PP), for example:

Table 18: Partial Paradigm of Mp 'be' and Ngty 'go' Auxiliaries, Present (+Past Perfective)

	Ngw Pr	Ngk Pr.PP	Mp Pr.PP
1sg	*nga -gani -m*	*nga -gani -M*	*nga -na -m*
2sg	*ya -gani -m*	*ya -gani -M*	*tha -na -m*
3sg-a	*ye -ni -m*	*ye -ni -M*	*ka -na -m*
3sg-b	*ga -gani -m*	*ga -gani -M*	*ka -na -m*
1Iinc	*nganggi -ni -m*	*nganggi -ni -M*	*tha -na -m*

a = Ngty neutral, Mp neutral b = Ngty 'remote', Mp 'existential'

We could, then, try to account for the Mp /kV/ neutral stem as some sort of sporadic hiring of the /kV/ existential for neutral function. In the case of 'take' this would mean proposing that the category existed for the parent pSD auxiliary, a proposal which receives no support from the Ngty data. But surely the 'be' <—> 'go' and 'have' <—> 'take' correspondences suggest a more principled explanation: that the Mp /kV/ stem is the reflex of the first syllable of the pSD AVR. Let us examine this with respect to the 'have' auxiliary, though the explanation applies *mutatis mutandis* to 'be'. I suggest that at some stage in its prehistory Mp had AVR /*kanhthi/ throughout the paradigm. And third singular would have had a zero subject stem, being made up of just the TAM suffixed AVR. (Note that zero third singular marking is found in the Pr.PP in a number of auxiliaries in both Mp and Ngty.) Third singular /*kanhthi/ would have then been reanalysed as consisting of a /ka/ subject marker followed by an /nhthi/ AVR, there being a precedent for /kV/-shaped subject stems in the remote--existential category of the low-transitives as well as, perhaps, a few high-transitives. This reanalysis was associated with a reduction of /*kanhthi/ to /nhthi/ in the remainder of the paradigm. Possibly the third singular reanalysis prompted the reduction elsewhere; this is consistent with the general drive in Mp towards a more compact auxiliary. Alternatively, the third singular reanalysis itself may have been prompted by a phonologically driven reduction in the other forms, with the initial consonant of the original AVR being dropped (perhaps via an intermediate lenition to an approximant) both following the /rr/ number marker, as in Ngk, and intervocalically.

The only stumbling block to taking this scenario for pre-Mp as in fact being pSD is the third singular data. pNgty /*ye-njtji-n/ is an unlikely reflex of pSD /*ganhthi-n/. As I have remarked above (§3.4.1), /yV/ is not the regular Ngty third subject stem; it is more probably a retention than a stem which would be expected to be applied to evolving auxiliaries. Equally, the pNgty form is not likely to have been derived from /*yV-ganhthi-n/. The derivation would not be phonologically motivated, since there is no reduction of the AVR in the other forms (the first and second singular) where it is postvocalic. And there would appear to be no other analogical, paradigmatic etc. factors which would account for the reduction in the third singular auxiliary only. I therefore reconstruct /*ya-nhthi-n/ for the '*carry' third singular Pr.[34] This was an irregularity in pSD, the remainder of the paradigm having /*ganhthi/ for its AVR. Third singular /ganthi-n/ is then a (pre)Mp innovation, regularising AVR shape, which is then, with the reanalysis of the initial /ka/ as a subject stem, uniformly reduced to /nhthi/.

TAM. /n/ occurs in both Mp and Ngw and is therefore reconstructed as the pPr marker. This has become an assimilating nasal in Ngk. Observe that choice of the /n/ form constitutes a matching irregularity, and thus further evidence of genetic relatedness; in both Mp and Ngw /m/ is the most common Pr(-PP) allomorph, less than a quarter of the auxiliaries selecting the /n/ variant.

DUAL. The correspondence between Ngty /gu/ and Mp /ka/ is reconstructable as /*gu/. The proto-phoneme /*g/ becomes /k/ in Mp by a rule, still synchronically operational to some degree, which devoices stops following nasals. The vowel reconstruction is more problematic. The vowel of the Ngty dual, which corresponds to the Mp /a/, is represented by Reid as underlyingly /u/. This is realised as either /u/ or /i/. Prior to syllables with an /i/, /e/ or /a/ nucleus, it is realised as /i/; elsewhere, that is word-finally or prior to syllables with an /u/ nucleus, it is realised as /u/ (Reid 1990:122). A number of such roundness-assimilating /u/s (not all of them as synchronically transparent as the dual vowel) can be identified in Ngty auxiliaries; these correspond regularly to Mp /a/ (Green 1995). There are also regular correspondences between Mp /u/ and non-assimilating Ngty /u/, and between Mp /a/ and Ngty /a/. This data, in phonological terms, would appear to be most plausibly accounted for by proposing that the Ngty assimilating /u/s preserve the character of the vowel in pSD, and that Mp has eliminated the surface variation of this /*u/ by lowering it to neutral /a/.[35]

3.5 'shove' auxiliary, future

Ngty has an auxiliary referred to by Reid as the 'shove' auxiliary, which 'classifies activity that affects its undergoer by projecting it into motion, or in some way re-arranging

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[34] The change of the third singular subject stem /*ya/to Ngty /ye/ is associated with the Ngty lenition of second singular /*THa/ to /ya/, and maintains the distinction between the two forms, which would otherwise collapse. Third singular /ye/ is a regular Ngty development; it is not visible in Mp and not to be attributed to pSD.

[35] The alternative would be to reconstruct dual /*ga/ and have certain /*a/ vowels in pSD, in particular morphemes, become subject to raising and rounding-assimilation processes. While not implausible in itself this suggestion is not supported by other data on vowel harmony in the Ngty verb, which shows evidence of backness/frontness assimilation of certain vowels, but no raising, and, apart from the dual, no rounding-assimilation.

its spatial configuration' (Reid 1990:269). Semantically corresponding to, and formally cognate with, Ngty 'shove' is Street's Mp 'verb class 29', which appears in verbs such as 'shove', 'expel', 'take items from an enclosure' and 'send' (Street & Street 1989). In our final reconstruction here we shall, by comparing the Ngty (General) Irrealis with the Mp Future, put together what we can of the Future paradigm of the pSD '*shove' auxiliary.

SUBJECT STEMS. Most of the subject stems are reconstructed by the regular principles established in the preceding sections, and the only issues that we need to deal with here are the correspondence in the inclusive, and the prehistory of the Mp Future Irrealis <—> Ngty Undesirable correspondence.

Table 19: SD and pSD: 'shove' Auxiliary, Mp, pSD Future — Ngty Irrealis

	Ngw Irr	Ngk Irr	Mp Future	pSD Future
1sg	*ngu -du*	*ngu -di*	*ngu -rdu*	**ngu -rdu*
2gs-a	*yu -du*	*yu -di*	*thu -rdu*	**THU -rdu*
2sg-b	*gunjtju -du*	*gutju -di*	---------	**gunhthu -rdu*
3sg-a	*wu -du*	*wu -di*	*pu -rdu*	**Pu -rdu*
3sg-b	*gu -du*	*gu -di*	*ku -rdu*	**gu -rdu*
1Inc	*ngumbu -du*	*ngumbu -di*	*pu -rdu*	**ngumbu -rdu*
1Edl	*ngu -d -du -gu*	*ngu -d -di -gu*	*ngu -d -da*	**ngu -d -da*
2dl-a	*yu -d -du -gu*	*yu -d -di -gu*	*nu -d -da*	**nu -d -da*
2dl-b	*gunjtju -d -du -gu*	*gutju -d -di -gu*	---------	**gunu -d -da*
3dl-a	*wu -d -du -gu*	*wu -d -di -gu*	*pu -d -da*	**Pu -d -da*
3dl-b	*gu -d -du -gu*	*gu -d -di -gu*	*ku -d -da*	**gu -d -da*
1Epl	*ngu -d -du*	*ngu -d -di*	*ngu -d -du*	**ngu -d -du*
2pl-a	*yu -d -du*	*yu -d -di*	*nu -d -du*	**nu -d -du*
2pl-b	*gunjtju -d -du*	*gutju -d -di*	--------	**gunu -d -du*
3pl-a	*wu -d -du*	*wu -d -di*	*pu -d -du*	**Pu -d -du*
3pl-b	*gu -d -du*	*gu -d -di*	*ku -d -du*	**gu -d -du*

a = Ngty neutral, Mp Future Realis b = Ngty 'undesirable', Mp Future Irrealis

Turning firstly to the inclusive, we observe that here, unlike the PI and Pr-PP, the Mp and Ngty forms are relatable. Now the Mp inclusive in the PI and Pr.PP is, as we have seen above, formally related to the Mp second singular. But the Mp inclusive in the Future, as typified in Table 19, is rather related to the third realis singular. Semantically, a linkage between the inclusive and second singular would appear to be more plausible than a linkage between the inclusive and third singular. But in this case historically it is the third singular linkage that is more readily accounted for. The form /*ngumbu/ can be reconstructed as the pSD Future inclusive. This is preserved in Ngty. In Mp the medial /b/ becomes /p/ through the general process of post–nasal stop devoicing. Auxiliary contraction-rationalisation pressures in Mp then promote the deletion of the initial syllable; as a result, the inclusive falls

together with the /pu/ third singular realis.[36] This contraction of pSD /*ngVmbV/ to /pV/ in Mp is a completely regular, pan-auxiliary process.[37]

Ngty has a separate Undesirable in both second and third persons, but the separate Future Irrealis in Mp is restricted to third person only. Consequently, only the third person for this category can confidently be reconstructed on the basis of SD internal evidence alone. The reconstruction of third /*gu/ for this auxiliary follows the same lines as for the Remote-Existential correspondence of 'lie' in §3.4.1. Wider comparative data is required to determine whether the Ngty second person Undesirable is an innovation, or a reflex of a distinction made in pSD.[38]

SUBJECT NUMBER/AVR/DUAL. As is typical in the Mp Future <—> Ngty General Irrealis correspondence sets, there is no segmentable TAM morpheme, and the auxiliary consists maximally of a [Subject –Number –AVR –Dual] sequence.

While Ngty has just the single apical series, Mp has an apical contrast between alveolars and postalveolars. There is no evidence to suggest that Mp has recently developed its apical contrast, and it appears that Ngty has systematically merged the distinct alveolars and postalveolars of pSD. The consonant of the AVR in the singular, where we have a Mp /rd/ <—> Ngty /d/ correspondence, is therefore reconstructed as postalveolar /*rd/.

In the non-singular non-inclusive both languages have a number — AVR sequence /d-dV/, and the simplest reconstruction is to propose /*d-dV/ for the proto-language. (That is, we have the pSD AVR varying from /*rdV/ in the singular/inclusive to /*dV/ in the non-singular non-inclusive, presumably under the influence of the preceding alveolar number morpheme.) Of course one might ask here whether the simplest reconstruction is necessarily the best. And the question which then arises is whether the /d-dV/ sequences of the modern languages are better traced back to an original /*rr-dV/; this would necessitate positing assimilation in both languages but would make for a more regular reconstruction. Unfortunately the Mp data does not support this proposal. Compare the 'shove' paradigm above, for example, with the PI of the Mp 'be' <—> Ngty 'go' correspondence set given in Table 18.

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36 We can speculate on whether the prehistory of the PI and Pr-PP inclusive may be analogous. That is, the correct Mp forms would be derived if we suppose that the pSD PI and Pr-PP inclusive was /*ngVmthV/; the same process of initial syllable deletion that applies in the Future would then produce Mp inclusive /thV/, which falls together with the second singular. This /*ngVmthV/ inclusive allomorph would have simply been eliminated in Ngty, which, in generalising the Future /*ngVmbV/ to all TAM categories (perhaps under the influence of its Western Daly neighbours), produces an inclusive which is invariant for TAM category, as are the majority of its other subject stems. This appears to be something of an ad hoc proposal, but it is interesting to note that Matngele (of the Eastern Daly subgroup) has several auxiliaries with a parallel distribution of putatively cognate inclusive forms. These auxiliaries have /ngVm-njV/ as their realis inclusive dual subject stem, and /(k)VmbV/ as their irrealis inclusive dual stem.

37 The Future inclusive, though, is not everywhere identical to the third singular Realis Future, since some auxiliaries show a further reduction, deleting the /pV/ third singular Realis stem while maintaining the /pV/ of the inclusive.

38 Given the antiquity of /ngVnjtjV/ as a general second singular in northern Australia (Dixon forthcoming), and no source for the /gV(nj)tjV/ undesirable in contemporary Ngty, it does seem likely that pSD did have a separate second person Future Irrealis auxiliary. But /*gVnjtjV/ would have been the singular form only — /CVnjtjV/ second non-singulars are not attested elsewhere — and would have been generalised to the non-singular in the same way as the second singular neutral subject stems. A speculative second non-singular Future Irrealis for pSD would be /*gVnV/.

Table 20: Partial Paradigm of Mp 'be' and Ngty 'go' Auxiliaries, Past Imperfective

	Ngty PI	Mp PI Realis	pSD PI Realis
2sg	*ya -gadi*	*tha -rdi*	**THa -gardi*
3sg	*ye -di*	*ka -rdi*	**ya -rdi*
2dl	*ya -d -de*	*na -rde*	**na -rr -rde*
2pl	*ya -d -di*	*na -rdi*	**na -rr -rdi*

In the Mp 'be' PI the plurals have the structure /Ca-rdV/. It is clear that these derive from a pSD /*Ca-rr-rdV/ sequence, the /*rr/ number morpheme being lost via the well-motivated /rr/ plus apical cluster simplification rule which we have investigated above (§3.3). Recall that this rule in its most general form, was expressed as (4), given again here:

$$pSD \quad *rr \quad \begin{bmatrix} C \\ +Apical \\ +Anterior \end{bmatrix} \quad > \quad Mp \quad \begin{matrix} C \\ [\,-Anterior\,] \end{matrix}$$

Thus if we were to posit an /*rr-rdV/ sequence for the plural of 'shove' it should be systematically reflexed in Mp as /rdV/, and not as the /d-dV/ that we actually get. Consequently I maintain here the simplest reconstruction, assigning pSD 'shove' a /*d-d/ cluster, and pSD 'go' (> Mp 'be') a /*rr-rd/ cluster. One would assume that the two clusters ultimately derive from the same source. That is, it is highly likely that at some point in pre-pSD the ancestors of both '*shove' and '*go' had an /*rrV/ number morpheme. These two auxiliaries then underwent different paths of development in arriving at the pSD situation. In the '*shove' paradigm /*rrV/ was reduced to /*rr/, and the resultant /*rr-rd/ cluster subsequently underwent (right to left) manner assimilation and (left to right) place assimilation to become /*d-d/. But in the 'go' paradigm, for reasons that are not now apparent (though one possible reason is that a differing vowel quality blocked the reduction) a syllabic /*rrV/ was retained until much later, not reducing to /*rr/ until a point at which the /rr-rdV —> d-dV/ assimilation had ceased to be synchronically operable.

In the singular, inclusive and plural, the Ngw AVR vowel is (non-assimilating) /u/, as it is in Mp. This indicates that /*u/ should be reconstructed for pSD. The Ngk /i/ vowel cannot then be accounted for phonologically. Its genesis is not clear, but a possible source is the pSD PI Irrealis, a category which we infer existed in pSD, but the forms of which, in the general absence of Ngty cognates, we can only speculatively reconstruct (cf. §2). In the PI of 'shove' the single Ngty PI is formally relatable to the Mp PI Realis. The Mp PI Irrealis is not relatable to any Ngty paradigm, but it is formally close to the Future, varying primarily in respect of its AVR vowel, for example:

Table 21: Partial Paradigm of Mp 'shove' Auxiliary, Past Imperfective

	Mp PI Irrealis	Mp Future
2sg	*thu -rdi*	*thu -rdu*
2dl	*nu -d -de*	*nu -d -da*
2pl	*nu -d -di*	*nu -d -da*

The Mp PI Irrealis perhaps largely preserves the pSD PI Irrealis. If so, the collapse of the Realis — Irrealis contrast in the Ngty PI, and the taking over of the function of the original PI Irrealis by the new general Irrealis (normally based on the pSD Future paradigm), may have resulted in the original PI Irrealis becoming, in pNgty, an alternative way of expressing the general Irrealis. This alternative was dropped in Ngw, but became the sole choice in Ngk.

As shown in Table 15, the dual is marked by the regular /gu/ suffix in Ngty but by lowering of the AVR vowel to /a/ in Mp. We have argued in §3.2 that it is likely that the Mp marking preserves the pSD situation, with Ngty having extended the /gu/ marking from the pPr category, facilitating the eradication of the distinctive dual vowel. The lowered vowel marking for the dual is therefore reconstructed for pSD here.

4 Concluding remarks

The evidence from the auxiliaries, as outlined above, can leave us in no doubt that Mp and Ngty are closely genetically related, the auxiliary systems of the two languages being systematically derivable by a series of plausible and, for the most part, relatively minor changes from their immediate common ancestor. Clearly, there can be no other credible account of the formal similarities of the two languages. The matching array of both regularities and suppletions could obviously not have arisen by chance. Diffusion is similarly to be dismissed as a possible cause of these resemblances. The six classifiers, for each of which one TAM category has been reconstructed above, are merely the tip of the iceberg as far as our inventory of pSD auxiliary morphology is concerned; the methods illustrated above can be used to reconstruct relatively confidently most of the TAM categories of 18 pSD classifiers, and, with varying degrees of success, partial paradigms of a further 10 (Green 1995). Extensive morphological diffusion is of course possible, as Thomason and Kaufman (1988) have demonstrated, although it is typically associated with significant lexical diffusion, which is not evident in this case. In any event, Thomason and Kaufman present no precedents for such large-scale morphological diffusion as would be required for a non-genetic account of the formal similarities of Mp and Ngty.

While we can be sure, then, that Mp and Ngty are closely genetically linked, it remains for their status as a subgroup to be rigorously established; that is, the innovations that mark pSD out as distinct from its immediate precursor need to be explicitly identified, and the claim that no other languages constitute branches of pSD must be defended at length. But of equal interest to these questions, which pivot around the shared features of Mp and Ngty, is the matter of the degree of divergence between the two languages. Is it possible, for example, that the lexical, and, auxiliaries aside, the general grammatical diversity of Mp and Ngty is simply due to considerable time-depth and, despite their contemporary contiguity, protracted historical isolation from one another? Or has there been massive internally-driven innovation in one or both branches? Or is the the divergence to be accounted for externally, Ngty changing radically under the influence of its Western Daly neighbours, and/or Mp altering extensively as a result of contact with an as-yet unidentified (and perhaps extinct) speech community? These are intriguing questions that demand further detailed comparative work.

Appendix: Southern Daly phonemic inventories

Vowels in Ngty and Mp: *i, e, a, u*

	Bilabial	Dorsal	Apical	Laminal
Voiceless stops	*p*	*k*	*t*	*tj*
Voiced stops	*b*		*d*	
Fricatives	*f*	*g*	*s*	*sj*
Nasals	*m*	*ng*	*n*	*nj*
Lateral			*l*	
Rhotics			*rr* *r*	
Semivowels	*w*			*y*

Consonants in Ngty

	Bilabial	Dorsal	Apico Alveolar	Apico Postalveolar	Laminal[39]	Lamino Palatal
Voiceless stops	*p*	*k*	*t*	*rt*	*th*	*(tj)*
Voiced stops	*b*	*g*	*d*	*rd*	*dh*	*(dj)*
Nasals	*m*	*ng*	*n*	*rn*	*nh*	
Lateral			*l*	*rl*		
Rhotics			*rr*	*r*		
Semivowels	*w*					*y*

Consonants in Mp

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39 Note that the analysis adopted by Street (1987) represents Mp as having only a single laminal, orthographically Ch, which is realised as dental prior to back vowels, as well as before laminal stops which precede back vowels, and as palatal elsewhere. Street's representations are preserved in the data presented herein.

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6 *The evolution of verb systems in the Eastern Daly language family*

MARK HARVEY

1 Introduction

This paper examines the development of the verb system in the Eastern Daly language family, which consists of two closely related languages: Kamu and Matngele. This topic is of interest as the verb system which can be reconstructed for Proto Eastern Daly is related to the verb system that can be reconstructed for Proto Gunwinyguan (Alpher, Evans & Harvey: this volume[1]). The reconstruction of the verb system of Proto Eastern Daly is an exercise of some complexity as the verb systems of Kamu and Matngele are one of the points where the two languages are significantly different.

Kamu has fifteen verbs, and a system of six tenses: Past Perfective, Past Imperfective, Subjunctive, Present, Future, and Conditional. Matngele, on the other hand, has only six verbs. Five of these are intransitive: 'to burn', 'to go', 'to lie', 'to sit', and 'to stand'. These five verbs follow a system of seven tenses: Past, Present, Non-Future Imperfective, Past Irrealis, Immediate Future, Future, Adversative. The sixth Matngele verb 'to do' is the principal auxiliary verb in transitive clauses, and has a somewhat different system of six tenses: Past, Non-Future Perfective, Past Irrealis, Immediate Future, Future, Adversative.

The verb system that can be reconstructed for Proto Eastern Daly is essentially that of Kamu, in terms of both the number of verbs and the system of tenses. The evidence for the relationship of Proto Eastern Daly to Proto Gunwinyguan comes from Kamu. The verb system of Matngele is therefore, by extension, related to that of Proto Gunwinyguan. The verbal system of Matngele does, by itself, provide evidence that Matngele is a member of the Australian language family. However, in the absence of evidence from Kamu, the verbal system of Matngele could not be specifically related to that of Proto Gunwinyguan.

Tryon (1974:289–290) proposed that the two Eastern Daly languages can be subgrouped with their north-western neighbours, the two closely related members of the Northern Daly language family: MalakMalak and Guwema. As we will see, verb systems do not provide

[1] Unless otherwise indicated, all references to Proto Gunwinyguan are from Alpher, Evans and Harvey (this volume).

Nicholas Evans, ed. *The non-Pama-Nyungan languages of northern Australia: comparative studies of the continent's most linguistically complex region*, 159–184.
Canberra: Pacific Linguistics, 2003.

any evidence to support this proposed subgrouping, though there has undoubtedly been intensive and long-term contact between all four language varieties (§5).

The relationship between the verbal systems of Proto Eastern Daly and Proto Gunwinyguan is of further interest, as the most common verbal predicate structure found in the Eastern Daly languages differs in a number of ways from the most common verbal predicate structure found in the Gunwinyguan languages. The nature of these differences and their historical significance are examined in §7.

The materials on Kamu were provided by the last speaker, Elsie O'Brien, during fieldwork undertaken principally in 1989 and 1990. I checked some matters arising from this main period of fieldwork with Elsie until her death in 1994. Elsie had had only very limited opportunities to use the language since the late 1940s. She was able to freely construct sentences in Kamu, and provided a vocabulary of approximately 840 monomorphemic lexemes. There were however many lexical items that she could not recall, and she tended to lapse into English when constructing textual materials.

The materials on Matngele were provided by Edwin Purral and his brother Jack Marruritj in fieldwork with myself and with Ian Green during 1990 and subsequent years. Matngele is a dying language, and not in daily use. However it was used by a larger number of people more recently than Kamu. Both Purral and Marruritj are fluent speakers capable of giving textual materials. There are also other fluent speakers.

2 Eastern Daly verbal structures

The verbal structures of Kamu and Matngele are identical. The examples provided in this section are from Kamu, but the structural points illustrated apply equally to Matngele. The most common verbal clause structure in Kamu is illustrated in (1).

(1) *Wer=wun=any-ta-m.*
tease=3augDO=2minS-spear-PP
'You teased them.'
Coverb root=Object enclitic=Encliticised verb in auxiliary function

This construction involves an inflected verb form *any-ta-m*. This verb means 'to spear' in independent occurrences, and it is therefore glossed as 'to spear' in (1). However, it evidently does not convey this highly specific meaning in (1). The precise contribution of the verb in this construction requires further research, but it appears that certain generic components of the meaning of the verb are relevant. With 'to spear', it appears that a notion of 'targetting a goal' is its probable contribution. In (1), the verb is therefore a classical instance of an 'auxiliary'.

Verbs generally function as auxiliaries in Kamu. Of the fifteen verbs in Kamu, eight are attested functioning independently, as the sole verbal predicate in the clause: 'to burn', 'to do', 'to go', 'to lie', 'to see-detr', 'to sit', 'to stand', 'to take'. An example of this kind of minimal verbal clauses is provided in (2).

(2) *Yim ku-wa-min.*
fire 3minS-burn-PR
'The fire is burning.'

The meanings of six of the remaining seven verbs were determined through translation into other Aboriginal languages and Kriol. Elsie was quite prepared to translate these verbs as independent forms, even though they did not occur independently in Kamu. However, there is one verb *wölye*, which she was not prepared to translate independently. As this verb is attested only as an auxiliary, it is glossed as 'aux' when it appears.

Clauses involving only a verb are comparatively uncommon. Most 'lexical' verbal meanings are conveyed by coverbs, such as *wer* 'to tease' in (1). Coverbs occur in two forms in Kamu and Matngele. The form illustrated in (1) is the simple root form, and this has a perfective/unmarked aspect interpretation. When coverbs have an imperfective aspect interpretation they bear a suffix *-ma ~ -miyi*.

(3) *Wer-ma=wun=eny-e-ngke.*
tease-IMPF=3augDO=2minS-go-PI
'You were teasing them.'

Imperfective coverbs generally select the verb 'to go', or one of the stance verbs: 'to lie', 'to sit', 'to stand', as their auxiliary, even if the coverb generally takes another auxiliary in perfective/unmarked aspect (§3–§4).

Apart from conveying certain highly general meanings, auxiliary verbs have two other important functions. They indicate the person and number of the Subject by prefixes, and they indicate tense, mood and aspect distinction, chiefly by suffixes, but also occasionally with prefixes. While the verb conveys information about the person and number of the Subject, the equivalent information about the Object is conveyed independently by an enclitic (Harvey this volume, Chapter 7). Intransitive verbal constructions naturally lack the Object enclitic constituent.

The verbal structure in (1) involves two different types of morphological relationships: affixation (indicated by the hyphen) and clisis (indicated by the equals sign). Clisis is distinguished in two ways. Firstly, morphemes joined by clisis do not have to be pronounced as one phonological word. It is possible to place pauses at the enclitic junctures, so that (1) could consist of up to three phonological words. Secondly (1) could also be alternatively ordered as in (4), though this is less common.

(4) *Wer=any-ta-m=wun.*
tease=1minS-spear-PP=3augDO
'You teased them.'
Coverb root=Encliticised verb in auxiliary function=Object enclitic

The affixal relationships within the verb are quite different in nature. There is no possibility of pause placement or reordering. Further, verb paradigms show a degree of surface morphological opacity, and their internal morphological analysis is not straightforward in many cases.

Verbal structures of the type found in Kamu, where the basic verbal meaning is conveyed by a coverb which shows little or no inflection and where the verb most commmonly functions as an auxiliary, are common among northern languages. Kamu differs from most northern languages, however, in allowing compounding of coverbs.

(5) *Tic-tey-cet=a-tta-ny.*
return-see-stand=1minS-stand-PP
'I stood and looked back.'

Compounding occurs extensively in Kamu. It is used in a partially grammaticised way to form reflexives, inchoatives, and causatives among other constructions.

3 The synchronic functioning of the Kamu verb system

It is not possible to provide a complete description of the synchronic functioning of the Kamu verb system, as fieldwork was subject to classic language-death factors. These 'language death' limitations are of importance because, from a synchronic perspective, the Kamu verb system is notable for its high rates of defectiveness and suppletion. Of the fifteen verbs, only six show complete and independent paradigms: 'to burn', 'detr(ansitiviser)', 'to do', 'to lie', 'to sit', 'to stand'. An examination of Table 1 reveals that defectiveness is particularly frequent in the Past Imperfective. Six of the fifteen verbs lack Past Imperfective forms altogether.

The Past Imperfective forms of three of the remaining verbs — 'to hit', 'to take' and 'to do' — are involved in an alternation with the Past Imperfective forms of the 'go', 'sit', 'lie' and 'stand' verbs.

(6) *Tac=Ø=e-mu.*
hit=3minDO=1minS-hit.PP
'I hit him.'

Table 1: Kamu Verb Paradigms

	PP	PI	Subjunctive	Present	Future	Cond
'to burn'	*wa-rning*	*wari-ni*	*wa(ri)-ni*	*wa-mi-n*	*wari*	*wari*
'to consume'	*le-ny*	N/A	*l/we-y*	[*yi-ny-ce-n*]	*ye*	*tte*
'detransitiviser'	*yicci-ng*	*yicci-ni*	*yicci-ni*	*yicci-mi-n*	*yicci*	*yicci*
'to do'	*mi-ny*	[*mi-ni*]	*mi-ni*	*mi-n*	*mi*	*mi*
'to get'	*ma-y*	N/A	N/A	[*me-ng-ke-n*]	*ma*	*ma*
'to go'	*yany*	*yengke*	*wali* (minS) *rri* (augS)	*yang(ku)*	*wuy*	*yung*
'to hit'	*mu*	[*wu-nu*]	*wu-y*	[*wu-N-pe-n*]	*wu*	*yung*
'to lie'	*yu(ngu)ny*	*yu*	*ni*	*yu*	*yu-ng*	*yu-ng*
'to see'	*ne-ng*	N/A	*wuy*	[*ne-mi-n*]	*na*	*na*
'to see detr'	*na-cci-ng*	N/A	N/A	*na-cci-mi-n*	*na-cci*	*na-cci*
'to sit'	*ni-nginy*	*ni*	*na-y*	*nö/e-n*	*ni-ng*	*ni-ng*
'to spear'	*rta-m*	N/A	*rta-y*		*rta*	*rta*
'to stand'	*tta-ny*	*tti*	*tta-y*	*ttu*	*tta-ng*	*tta-ng*
'to take'	N/A	[*yinyce-nge*]	N/A	*yanycu*	N/A	N/A
wölye AUX	*wölye-ng*	N/A	*wuy*	N/A	*wölye*	*wölye*

Items underlined are borrowed from other verb paradigms.
Items in [square brackets] are not commonly used.

(7) *Tac-ma=Ø=e-wu-nu.*
hit-IMPF=3minDO=1minS-hit-PI
'I was hitting him.'

Tac-ma=Ø=e-ye-ngke.
hit-IMPF=3minDO=1minS-go-PI
'I was hitting him.'

The coverb *tac* 'to hit' always takes the 'hit' verb as its auxiliary, in a Past Perfective clause. In a Past Imperfective clause, *tac* may take either the 'hit' verb, or the 'go' verb as illustrated in (7). The two variants in (7) are equivalent, at least with respect to information such as tense and aspect. The three stance verbs are also acceptable auxiliaries in the Past Imperfective. In statistical terms, either 'go' or one of the three stance verbs are far more common than 'hit' as the auxiliary found with *tac* in the Past Imperfective. The same situation holds with the Past Imperfective form of 'to take' *yinyce-nge* and of 'to do' *mi-ni*, though *mi-ni* is somewhat commoner than the Past Imperfective forms of 'to hit' and 'to take'.

Diachronically, the patterns of alternation found with the Past Imperfective forms of the 'hit', 'take' and 'do' verbs could easily result in the elimination of these forms for the 'hit' and 'do' verbs. The 'take' verb is a special case, and other factors have led to its preservation, as discussed later in this section.

The Present is another tense which is characterised by defectiveness. In the Present only two verbs lack forms altogether: 'to spear' and *wölye* 'Aux'. Coverbs, which take these verbs in other tenses, take either 'go' or one of the stance verbs, or one of the other transitive auxiliaries in the Present. However, five of the remaining thirteen verbs are characterised by alternations: 'to consume', 'to get', 'to hit', 'to see', 'to take'.

(8) *Wa-ma=Ø=e-me-ngken.*
get-IMPF=3minDO=1minS-get-PR
'I am getting it.'

Wa-ma=Ø=a-yang(ku).
get-IMPF=3minDO=1minS-go.PR
'I am getting it.'

Even though the 'get' verb has a Present tense form, the coverb *wa* 'to get' would normally take either 'go' or one of the three stance verbs as its auxiliary in the Present tense. In the particular case of the 'get' verb, rarity extends beyond the statistical patterns so far discussed. The patterns of rarity are also affected by considerations of person.

Table 2: Present tense paradigm of 'to get' in Kamu

1minS	*e-me-ngken*
1+2minS	[see discussion below]
2minS	*eny-me-ngken*
3minS	*ku-me-ngken*
1augS	*e-rru-me-ngken*
2augS	*nungku-rru-me-ngken*
3augS	*ku-rru-me-ngken*

Of the forms in the Present paradigm of 'to get', only the 1minS and 3minS forms were given spontaneously. The other forms were constructed, and met with varying degrees of acceptance. It did not prove possible to find an acceptable 1+2minS form (*empu-me-ngken* is the predicted form, but it did not meet with approval). As we will see, person-based defectiveness is found in other verbal paradigms.

The Subjunctive is characterised by a combination of defectiveness and suppletion. There are three verbs which lack forms: 'to get', 'to see-detr', 'to take'. And there are two verbs which have suppletive forms in this tense: 'to see' and *wölye* 'Aux'. These two verbs use the Subjunctive form of the 'hit' verb, *wu-y*. Suppletion is also arguably characteristic of the Present. As we will see (§4), some Present tense forms in Kamu historically involve compounding with the Present tense of other verbs. This compounding may be viewed as partial suppletion.

The remaining tense which shows suppletion and defectiveness is the Conditional. The verb 'to hit' uses the Conditional form of the 'go' or 'lie' verbs, *yang*. The Conditional form of the 'get' verb is only infrequently attested. The Past Perfective and Future tenses do not show either defectiveness, suppletion, or alternation. The one exception is the 'take' verb, which in any case shows an idiosyncratic patterning. We will return to consider the exceptional patterning of the 'take' verb later in this section.

To complete the discussion of defectiveness and suppletion patterns, two further verb limitations need to be considered. One of these is found with the 'burn' verb, which shows a person-based defectiveness. In the Past Perfective, this verb inflects for all persons and may mean either 'burn' or 'get burnt'. In the other tenses it may only inflect for a third Minimal Subject and has only the meaning 'burn'.

The other limitation involves the detransitiviser. The detransitiviser has a number of unusual characteristics in Kamu. In most Australian languages, the detransitiviser is a suffix which attaches to any transitive verb root to convey a variety of meanings of reduced transitivity: reflexive, reciprocal, middle etc. In Kamu, the detransitiviser is found both as an independent verb and as a suffix. The detransitiviser occurs as a suffix only with the 'see' verb. As a suffix, it takes the form *-cci*.

(9) *Tey=ku-rru-na-cci.*
see=3S-augS-see-detr
'They will see each other.'

The independent form is *yicci*, which probably consists historically of a **yi* 'do/say' verb and the *-cci* suffix found with the 'see' verb (§6). The independent form tends to occur in clauses describing intentional detransitivised actions as in (10).

(10) *Marrappippi wirr=e-yicci-ng.*
headband tie=1 minS-detr-PP
'I tied a headband on.'

Uncontrolled detransitivised actions tend to be coded by compound coverb constructions involving an intransitive stance predicate as in (11).

(11) *Memek-ngerrp-wut=e-yu-ny.*
hand-cut-lie=1 minS-lie-PP
'I cut my hand.' (lit. 'My hand lies cut.')

In summary, we may say that the Kamu verb system shows a tendency towards a reduction in the number of verbs. This tendency manifests itself chiefly through defectiveness, suppletion, and alternations of various kinds, but also through limitations in the functional ranges of verbs. Defectiveness, suppletion and alternations are characteristic of tenses conveying imperfective (Past Imperfective and Present) and counterfactual/hypothetical meanings (Subjunctive and Conditional).

With the imperfective tenses, there is also a tendency for the three stance verbs and the verb 'to go' to extend their ranges as auxiliaries. In order to understand this tendency, it is necessary to examine the role of these verbs within the Kamu clausal system. The three stance verbs and 'go' are among the group of Kamu verbs which may occur independently. However, the meanings 'to go', 'to lie', 'to sit', and 'to stand' are not usually conveyed simply by the occurrence of one of these verbs. Rather these meanings are usually conveyed by a combination of the appropriate verb, and one of the four coverb roots listed in (12).

(12) *puy* 'to go', *wut* 'to lie', *töt* 'to sit', *cet* 'to stand'

When the stance verbs and 'go' occur independently, they usually convey existential/ ascriptive meanings.

(13) *Lakiyi may-ma meyi wertwert ku-yang.*
man that-PROM tucker greedy 3minS-go.PR
'That man goes (is) greedy for tucker.'

(14) *Marrk ngun-ma kerr-kac-ma marrk-curu ku-yu.*
cold there-PROM feel.cold-caus-IMPF cold-really 3minS-lie.PR
'It is cold out there, feeling cold. It lies (is) really cold.'

In other words, the stance verbs and 'go' tend to be leached of their lexical meaning and have copulative functions when they occur independently. I suggest that it is in the context of this copulative function that their tendency to expand their range as auxiliaries in he imperfective tenses is to be understood. The Kamu construction consisting of an imperfective coverb form and a copulative stance or motion verb parallels progressive/ imperfective constructions in a number of languages, including English. This construction shows a tendency to extend its range for presumably the same reasons that other progressive constructions have tended to extend their ranges in English and other languages. One important long-term implication of these tendencies is that the three stance verbs and 'to go' are the verbs which will almost certainly be maintained in any system which is similar to that of Kamu. As we will see in §4, this implication is undoubtedly of relevance in considering the relationships of Kamu to Matngele.

Copulative functions also appear to have played a role of some significance in the survival of two of the verbs in Kamu. One of these is the verb 'to take' which, as previously remarked, has an idiosyncratic tense pattern. It occurs only in the Past Imperfective and the Present, the two tenses which are most subject to defectiveness. The survival of 'take' in just these two tenses would appear to correlate with the fact that it is attested chiefly as a possessive copula 'to have', precisely in these two tenses.

(15) *Akkal-ngu palpmuru nempeyu a-yanycu=wun.*
sister-1min two one 1minS-take:PR=3augDO
'I have three sisters.'

(16) *Akkal-ngu palpmuru nempeyu e-yinyce-nge=wun nangka*
sister-1min two one 1minS-take-PI=3augDO but

nempu tat=Ø-mi-ny.
other die=3minS-do-PP
'I had two sisters, but the other one died.'

The lexical meaning 'to take' is usually conveyed by the following compound of coverb roots.

(17) *wa-puy* 'to get-to go'

The other verb whose survival appears to involve copulative functions is the only compound verb 'to see-detr'. There are no other analogues for this compound verb, such as 'to hit-detr' or 'to spear-detr' though comparison with Proto Gunwinyguan (§6) suggests that such compounds would have occurred in the languages ancestral to Kamu. The survival of 'to see-detr' probably correlates with the fact that it also has a quasi-copulative meaning 'to become' (presumably via the connection between 'to become X' and 'to see oneself as X').

(18) *Kiyerk* *a-na-cci-ng.*
wet 1minS-see-detr-PP
'I got wet.'

Having described the synchronic patterning of the Kamu verb system, I return briefly to consider the role that 'language death' phenomena may have played in the patterns of defectiveness, suppletion and alternation which are evident. A pattern found universally in language-death situations is that speakers, of whatever fluency, lose recall of lexically stored information which is less frequently accessed (i.e. the obscurer vocabulary items, and the less frequently used tenses of less common verbs with lexicalised paradigms).

In this case, there is no direct evidence that can be brought to bear. There is however indirect evidence of two kinds that bears on this issue. One kind of evidence relates to the nature of the verbal meanings themselves. Most of the verbal meanings involved cannot be described as less frequently accessed. It is altogether unlikely that, if forms such as *e-wu-nu* 'I was hitting it' (7) were in standard use by speakers of Kamu, a speaker of Mrs O'Brien's fluency would have ceased to use these forms. I have worked on three other languages: Gaagudju, Larrikiya and Limilngan, which have much larger sets of lexicalised verb paradigms than Kamu. The speakers of these languages were all significantly less fluent than Mrs O'Brien. Nevertheless, they were all able to provide forms such as 'I was hitting it' without problems.

The second kind of evidence comes from comparison with Matngele. As we will see (§4 and §6), some of the patterns of defectiveness and suppletion characterising the Kamu verb system are also found in Matngele and are reconstructable for Proto Eastern Daly. In overall terms, therefore, it seems likely that language death has played only a minimal, if any, role in the patterns of defectiveness and suppletion which characterise the Kamu verb system synchronically.

4 The Proto Eastern Daly verb system

The Matngele verb paradigms are set out in Table 3. A comparison of the these paradigms with the Kamu verb paradigms in Table 1 leaves no doubt that the two languages are closely related. This paper does not provide a complete reconstruction of paradigms for the two languages, but is rather concerned with the general outlines of the paradigmatic changes that have taken place since the break-up of Eastern Daly.

Table 3: Matngele verb paradigms

	Past	Present	Non-Fut Impf	Past Irrealis	Immediate Future	Future	Advers
'to burn'		*wa-n-mi-n*					
'to go'	*yangk-ak*	*yang(ku)*	*ya-ny ~ ye-nginy*	*wali-k* (minS) *rri-k* (augS)	*wali* (minS) *rri* (augS)	*wuy-ak*	*yung*
'to lie'	*y-ak*	*yu*	*yö-ny*	*ni-k*	*ni*	*yi-ng-ak*	*yö-ng*
'to sit'	*nö-n-ek*	*ne-n*	*ni-ny*	*na-y-ak*	*na-y*	*ni-ng-ak*	*ni-ng*
'to stand'	*tt-ak*	*ttu*	*tta-ny*	*tta-y-ak*	*tta-y*	*tta-ng-ak*	*tta-ng*

	Past	Non-Fut Perfective	Past Irrealis	Immediate Future	Future	Advers
'to do'	*(rti/e)-mi/e-n-ek*	*rta-m*	*rte/i-y-ak*	*rta-y*	*rta-ng-ak*	*rta-ng*

The first point to be noted is that the tendencies which are evident in the Kamu verbal system appear to have played out to their conclusion in Matngele. Matngele shows the outcome in terms of inventory predicted in the preceding section. There are six verbs: the three stance verbs, 'to go', 'to do', and 'to burn'. The 'burn' verb is remnantal. It occurs only in the Present tense and only in a third minimal Subject form: *ku-wanmin*. The Kamu equivalent is *ku-wamin*. These two forms raise an interesting issue in the internal reconstruction of Proto Eastern Daly. The complete Kamu paradigm for this verb is set out in Table 4.

Table 4: Complete Kamu paradigm of 'to burn' in Kamu

	PP	PI	Pres	Subj	Fut/Con
Kamu 'to burn'	*wa-rning*	*wari-ni*	*wa-min*	*wa(ri)-ni*	*wari*

The root in tenses other than the Present is *wa(ri)*. The Present tense shows a kind of partial suppletion where, instead of directly suffixing a tense marker to the root, the Present tense form *min* of the 'do' verb is suffixed to the root. There are three other Present tense forms in Kamu which show this partial suppletion:

(19) *ne-min* 'see-PR', *na-cci-min* 'see-detr-PR' and *yicci-min* 'detr-PR'

The Matngele form *ku-wanmin* shows the same *-min* suffixation as Kamu. The principal difference is that it is not suffixed directly to the root *wa*. Rather, it is suffixed following a segment /n/. This segment is most probably the original Present tense suffix for the 'burn' verb. As we will see in §6, there is evidence for another suffixation, structurally isomorphic to *-min* suffixation, which attached historically to forms bearing a Present tense suffix. While the verbal form *ku-wanmin* is an isolate within the synchronic verbal structures of Matngele, it does establish that *-min* suffixation is to be assigned to Proto Eastern Daly.

In examining the correspondences in form between the other Matngele verbs and Kamu verbs, we need also to consider the correspondences between Kamu and Matngele in tense

categories. The Matngele 'do' verb shows differences in tense categories from the other verbs: the three stance verbs and the 'go' verb. Therefore it is considered separately.

The Kamu Conditional and the Matngele Adversative correspond in form and largely in function (both are used in evitative 'lest' constructions). The Kamu and Matngele Futures also correspond in function and largely in form. The Matngele Future involves an *-ak* suffix which does not occur in Kamu. This suffix occurs elsewhere in the Matngele paradigms. It serves to differentiate the Past Irrealis from the Immediate Future. These two Matngele tenses correspond to the Kamu Subjunctive, which conveys Past Irrealis, Hortative and Imperative meanings. The correspondence in form is most direct between the Matngele Immediate Future, which also conveys Hortative and Imperative meanings, and the Kamu Subjunctive. The *-ak* suffix also appears to have differentiated the Present and Past in Matngele, at least historically. The Kamu Present corresponds to the Matngele Present. The Kamu Past Perfective corresponds with the Matngele Non-Future Imperfective. There is no corresponding tense for the Kamu Past Imperfective in Matngele.

We may now return to consider the correspondences involving the 'do' verb. Only the Past tense form *(rti)-mi-n-ek*, involves a correspondence with the Kamu *mi* 'do' verb. Even this correspondence is a complex one, and involves *-mi-n* suffixation (see Table 15). Otherwise, the forms for this verb correspond to forms in the paradigm of the 'spear' verb in Kamu: Kamu Past Perfective *rta-m*, Matngele Non-Future Perfective *rta-m*, Kamu Subjunctive *rta-y*, Matngele Immediate Future *rta-y*; the Matngele root *rta ~ rte ~ rti* found in the other tenses is also cognate. The correspondence of the Kamu Past Perfective form to a Matngele Non-Future Perfective is unusual. In the other verbal paradigms, the Kamu Past Perfective form corresponds to a Matngele Non-Future Imperfective.

The derivation of the Matngele 'do' verb from a verb meaning 'to spear' is of interest, and further research into the nature of semantic shifts in auxiliary verb systems is required to map the paths connecting the two patterns of usage. This paper does not examine this issue in detail, as it is only of tangential concern. We have seen that the 'spear' verb, in its auxiliary function in Kamu, appears with a wider range of coverbs than those simply referring to spearing (1). It appears principally with polyvalent coverbs, as would be expected with a transitive verb. In Matngele, the 'do' verb is the main auxiliary for polyvalent coverbs. This suggests that the 'spear' verb expanded its transitive auxiliary functions in Matngele, until it became a general marker of transitivity.

We may now turn to consider the system that should be reconstructed for Proto Eastern Daly. The Kamu system involves a significantly greater number of verbs than that of Matngele. The system of suffixal inflections in Kamu is much more irregular than that of Matngele. Therefore, on general grounds, it should be reconstructed for Proto Eastern Daly rather than the Matngele system. Further, as we will see in (§6), comparison with Proto Gunwinyguan establishes that elements of the Kamu tense system are of great antiquity. Consequently, I reconstruct the Kamu tense system, and analyse Matngele as having innovated extensively using a suffix *-ak* (whose origins are presently unknown). The proposed Proto Eastern Daly tense system is illustrated in Table 5, with the paradigm of the 'stand' verb.

Table 5: Proposed Proto Eastern Daly tense system illustrated with pED 'to stand'

	PP	PI	Pres	Subj	Fut	Con
pED 'stand'	**tta-ny*	**tti*	**ttu*	**tta-y*	**tta-ng*	**tta-ng*

The fulcrum for the changes in Matngele appears to have been the complex interaction between past and present tense, clausal perfective and imperfective aspect, and the lexically imperfective character of the stance and motion verbs in the Eastern Daly languages. The first stage appears to have been the loss of the Past Imperfective. The Past Imperfective forms of verbs, other than the stance and motion verbs, are restricted in their occurrence in Kamu, and the loss of the Past Imperfective forms of the 'burn' and 'do' verbs in Matngele is merely an extension of the patterns evident in Kamu. However the Past Imperfective forms of the stance and motion verbs are common in Kamu, and their loss in Matngele cannot be explained by analogy with Kamu.

The most plausible hypothesis explaining the loss of the Past Imperfective forms of the stance and motion verbs involves the imperfective coverbs, which take the suffix *-ma ~ -miyi* (see example (3)). This suffix is found in both Kamu and Matngele, and may be reconstructed for Proto Eastern Daly. Synchronically in Kamu, Imperfective coverbs require a Past Imperfective auxiliary verb when the clause has past tense reference. Imperfective aspect is therefore redundantly marked on both coverb and auxiliary verb.

However, it is most unlikely that imperfective aspect was in origin redundantly marked. Rather, it is probable that the imperfective marking on coverbs and auxiliary verbs were originally independent of one another. The imperfective marking on coverbs probably indicated 'lexical' imperfective meanings, as the coverb expresses the basic verbal predicate meaning. The imperfective marking on auxiliary verbs probably indicated 'clausal' imperfective meanings.

I propose that imperfective coverbs in Proto Eastern Daly could occur with both Past Perfective and Past Imperfective verbs. I propose that Past Imperfective verbs were exclusively imperfective in aspect. Past Perfective verbs, on the other hand, while primarily perfective in usage, were overall unmarked in aspect. Matngele has taken the path of marking imperfective aspect only on the coverb, and the imperfective forms of the stance and motion verbs were lost. Kamu has taken the alternative path of marking imperfective aspect on both verb and coverb. The consequence of the loss of the Past Imperfective in Matngele was that there was a single Past tense, with the inflectional forms of the former Past Perfective tense.

Table 6: Early development in Matngele from pED tense system: PP > Past; PI is lost

	Past	Pres	Subj	Fut	Con
Matngele 'to stand'	**tta-ny*	**ttu*	**tta-y*	**tta-ng*	**tta-ng*

At some stage after this development, the *-ak* suffix came into play within the verbal system of Matngele. There are no obvious sources for this suffix, so reconstruction of its original semantics is somewhat problematic. However an examination of its synchronic distribution within the Matngele tense system suggests that it was a 'Non-Present perfective' marker.[2] Within this Non-Present tense frame, *-ak* marks generally perfective notions: the simple intentional future, the past perfective, the past irrealis.

The suffixation of *-ak* to the Future did not alter the tense system of Matngele (see Table 7, below, for a summary of this and following developments). However, its suffixation to

2 The discontinuous Non-Present tense reference is somewhat unusual, but tense markers with discontinuous reference are attested in other northern Australian languages (e.g. Burera, Glasgow 1964)

the Present and the Subjunctive resulted in a major reorganisation of the tense system. The old Subjunctive tense was divided into two new tenses: the Immediate Future which maintained the forms of the old Subjunctive, and the Past Irrealis which consisted of the old Subjunctive forms suffixed with *-ak*.

A new Past Perfective tense was created, based on the Present. The choice of the Present as the base for the new Past Perfective, rather than the existing Past, may appear somewhat unusual. It is probably to be understood in terms of the *-ak* suffix marking an immediate binary opposition to Present tense reference (in other words the Present tense is the pivot of oppositions for the *-ak* suffix). The creation of a new Past Perfective tense meant that the old Past tense became a Past Imperfective tense (with forms that had originally been Past Perfective).

Table 7: Further historical development of the Matngele tense system

system #1	Past	Pres		Subj		Fut	Con
stage #1	**tta-ny*	**ttu*		**tta-y*		**tta-ng*	**tta-ng*
+**-ak*		**ttu-ak*		**tta-y-ak*		**tta-ng-ak*	
stage #2	**tta-ny*	**tt-ak*	**ttu*	**tta-y-ak*	**tta-y*	**tta-ng-ak*	**tta-ng*
system #2	PI	PP	Pres	Subj	ImmFut	Fut	Con
system #3	NFImpf	PP	Pres	PIrr	ImmFut	Fut	Con

After the changes effected by the suffixation of *-ak* (system #1 > system #2 in Table 7), the Past Imperfective started to extend its range into the Present. This is a not unexpected development given the inherent connection via imperfective aspect between the two.

The 'do' verb shows a distinctive pattern of development in the Non-Future Realis categories where it has a different tense system to the other four verbs. I suggest that the key to understanding this distinctive pattern lies in the coding of realis imperfectivity. In §3 we saw that the usual auxiliaries found with realis imperfective tenses in Kamu are the stance verbs and 'to go'. This is also the pattern in Matngele: polyvalent coverbs normally take one of these verbs as their auxiliary when Present or Imperfective meanings are to be conveyed. If this pattern also characterised the earlier stages of Matngele, then imperfective coverbs would only rarely, if at all, have combined with past tense forms of the 'do' verb. Consequently when the imperfective coverb + 'do' auxiliary verb construction was lost, the Past Perfective of the 'do' verb did not extend its functional range to cover Past Imperfective meanings, unlike the stance verbs and 'go'.

When the *-ak* suffix subsequently came into play, the course of developments with the 'do' then naturally differed from that found with the stance verbs and 'go'. The creation of a new Past Perfective based on the Present did not mean that the originally Past Perfective forms ended up marking Past Imperfective meanings. Rather they were confined to marking a narrow range of Past Perfective, and indeed chiefly Perfect meanings. In many northern languages, it is common for certain classes of ascriptive/inchoative predicates to take morphologically past tense marking with present tense reference. This pattern reflects an equation of perfect with present (i.e. 'is' = 'has become') and the Past Perfective category thereby generalised to a non-future perfective, as exemplified by (20).

(20) *Werek-kiyic menwuyuk Ø-rta-m.*
child-DIM hunger 3minS-do-NFP
'The little kid is hungry'

(21) *Werek-kiyic menwuyuk ngac-ku-yang.*
child-DIM hunger just-3minS-go.PR
'The little kid just is hungry all the time.'

Examples (20) and (21) contrast a present perfect ascription taking the 'do' verb, with a present habitual ascription taking the 'go' verb. These tense forms are also found with past tense reference with a kind of Pluperfect meaning ('had become').

(22) *Werek-kiyic lerrp=pu-rru-rta-m ngucyente.*
child-DIM hot=3S-augS-do-NFP morning
'The little kids were hot this morning.'

Subsequent to the creation of the new Past Perfective for the 'do' verb, the original Present tense was lost. This accords with the general pattern whereby the stance verbs and 'go' are the only verbs to convey realis imperfective tense categories.

5 Eastern Daly and Northern Daly

Any examination of the historical relationships of Eastern Daly must consider the possibility of a relationship with the Northern Daly languages, MalakMalak and Guwema. Tryon (1974:289–290) groups these four languages together as a family. It is undoubtedly true that the Northern Daly languages show a high level of both lexical correspondences and structural similarities, particularly to Matngele but also to Kamu. The MalakMalak and Guwema verb systems are set out in Tables 8 and 9. The similarities, in terms of the number of verbs and the meanings conveyed by these verbs, between these two systems and the Matngele system are immediately evident. However, there is little similarity between the forms in the three sets of paradigms, and even less that would count as the type of innovations required to establish a subgroup.

Table 8: MalakMalak verb paradigms

	Past	Present	Non-Future Imperfective	Future	Purposive	Subj
'to go'	*ta*	*tö*	*nguny*	*nung*	*tung*	*winy*
'to go'	*wurra*	*wörrö*	*wörreny*	*nö-rra-ng*	*tö-rra-ng*	
'to lie'	*yu*	*yö*	*yö-nguny*	*nö-yu-ng*	*tö-yu-ng*	*winy*
'to sit'	*nu*	*nö*	*ni-nginy*	*ni*	*ti-ni*	*wininy*
'to stand'	*cu*	*cö*	*ce-nginy*	*ni-ya-ng*	*ti-ya-ng*	*winy*

	Non-Future Perfective	Sequential	Future	Purposive	Subj
'to do'	*ya ~miny~wuny*	*wöntön*	*n-ma*	*tö-me*	*wuntu*

Table 9: Guwema verb paradigms

	Past	Present	Non-Future Imperfective	Immediate Future	Future	Subjunctive
'to go'	*tu-me*	*tu*	*nguny*	*tung*	*wu-n-pu-ng*	*wu-yi-ny*
'to lie'	*yu-me*	*yu*	*yu-nguny*	*tu-yu-ng*	*wu-n-yu-ng*	*wu-yi-ny*
'to sit'	*nu-me*	*nu*	*ni-nginy*	*ti-ni*	*wu-ni*	*wu-ni-ny*
'to stand'	*ju-me*	*ju*		*ti-ya-ng*	*wu-ny-ca-ng*	*wu-yi-ny*

	Non-Future Perfective	Immediate Future	Future	Subjunctive
'to do'	*ya ~ miny*			*mö-nö*

The Northern Daly languages have reflexes of the Pan-Australian roots **yu* 'to lie', **ni* 'to sit', and **ca* 'to stand', but this certainly does not establish any kind of special relationship to Eastern Daly. This is especially so, given that there is a degree of uncertainty as to whether the Eastern Daly root for 'stand', *tta*, is in fact a reflex of **ca* (Table 25). There are only limited correspondences in suffixal inflections between the Northern Daly and Eastern Daly languages.

Table 10: Limited correspondence in suffixal inflections between Northern Daly and Eastern Daly languages: the three stance verbs Future *-ng*

	MalakMalak	Guwema	Matngele	Kamu
'lie-FU'	*yu-ng*	*yu-ng*	*yu-ng*	*yu-ng*
'sit-FU'	*ni*	*ni*	*ni-ng*	*ni-ng*
'stand-FU'	*ya-ng*	*ca-ng*	*tta-ng*	*tta-ng*

The three stance verbs show a Future tense marker *-ng*. However this is absent in the 'sit' verb in the Northern Daly languages, and as we have noted the correspondence between the 'stand' roots is problematic. The stance verbs also show correspondences involving a suffix **-ngVny*, which probably originally had a Past Perfective meaning.

Table 11: The three stance verbs with suffixal reflex of **-ngVny*, probably originally PP

	MalakMalak-NFI	Guwema-NFI	Matngele-NFI	Kamu-PP
'lie'	*yö-nguny*	*yu-nguny*	*yö-ny*	*yu-(ngu)ny*
'sit'	*ni-nginy*	*ni-nginy*	*ni-ny*	*ni-nginy*
'stand'	*ce-nginy*		*tta-ny*	*tta-ny*

However a Past Perfective suffix with this form is also widely attested among the stance verbs in the Gunwinyguan languages. Consequently the correspondences in Table 11 do not provide any evidence for subgrouping Northern Daly and Eastern Daly. The most suggestive evidence from the verb systems for a subgroup consisting of Northern Daly and Eastern Daly comes from the Non-Future Perfective paradigm of the 'do' verb in MalakMalak and Guwema — Table 12.

Table 12: Best evidence for a subgroup Northern Daly + Eastern Daly: non-Future Perfective paradigm of 'do', in MalakMalak and Guwema

	Minimal		Augmented	
	MalakMalak	Guwema	MalakMalak	Guwema
1S	*a-ya*	*a-ya*	*arr-uny*	*a-ca*
1+2S	*angka-ya*	*angka-ya*	*arrk-uny*	*arr-ca*
2S	*nun-ca*	*nun-ca*	*nungkurr-uny*	*nuku-ca*
3mS	*yi-miny*	*yi-miny*	*wirr-miny*	*wurr-miny*
3fS	*ni-miny*	*ni-miny*		
3MS	*mu-ya*	*mu-miny*		
3WS	*wu-ya*	*wu-miny*		

These paradigms show stem suppletion in both MalakMalak and Guwema. Two stems *ca* and *miny* are found in both languages, with the third *wuny* occurring only in MalakMalak. Of these, *miny* would appear to correspond directly to the Past Perfective form *mi-ny* of the 'do' verb in Kamu. Given that *miny* is suppletive within the paradigm of 'do' in the Northern Daly languages, it would seem most unlikely that it could be other than an inherited form. The common occurrence of *mi-ny* in the Northern Daly and Eastern Daly languages does not however provide evidence that these two families may be subgrouped together. Ngan'gityemerri, the southern neighbour of the Eastern Daly languages, has *mi-ny* as the basic Perfective tense form of its 'do' verb (Reid 1990). The paradigm of the 'do' verb in Ngan'gityemeri is set out in Table 13.

Table 13: Paradigm of the 'do' verb in Ngan'gityemeri

	Perfective	Past Imperfective	Irrealis	Present
3sgS	*me-ny*	*me-yi*	*mu*	*me-m*
Other S	*mi-ny*	*me*	*mu*	*mu-m*

In overall terms therefore the conclusion that must be drawn from a comparison of the verb systems of the Eastern Daly and Northern Daly languages is that they do not provide any evidence for the two families constituting a subgroup.

6 Proto Eastern Daly and Proto Gunwinyguan

Unlike the Northern Daly languages, the verbal system reconstructable for Proto Eastern Daly does show relationships to that reconstructable for Proto Gunwinyguan, which appear to hold at some level lower than that of Proto Australian. As Kamu preserves the Proto Eastern Daly system much more extensively than Matngele, the ensuing discussion uses Kamu forms, unless Matngele forms bear a particular relevance. Table 14 sets out the Proto Gunwinyguan verb paradigms which appear to have correspondents in Kamu.

Table 14: The Proto Gunwinyguan verb paradigms which appear to have correspondents in Kamu (cf. Alpher et al. this volume, Table 38)

	Past Perfective	Past Imperfective	Non-Past
'to get'	*ma-y*	*ma-ng-iny*	*ma-ng*
'to hit'	*po-m*	*pu-n-iny*	*pu-n*
'inchoative'	*-me-ny ~ -mi-ny*	*-me-n-iny*	*-me-n*
'to lie'	*yo-nginy*	*yo-y*	*yu-Ø*
'reciprocal'	*-nyci-ny*	*-nyci-n-iny*	*-nyci-n*
'to see'	*na-y ~ na-ng*	*na-n-iny*	*na-n*
'to sit'	*ni-nginy*	*ni-ny*	*ni-Ø*
'to spear'	*ra-m*	*re-n-iny*	*re-n*
'to be standing'	*tha-nginy*	*tha-ny*	*tha-ngen*
'to stand'	*thi-Ø*	*thi-ny*	*thi-Ø*

I begin by considering the Kamu 'do' verb. As we have seen this verb is evidently of some antiquity, as it has correspondents in Northern Daly and in Ngan'gityemerri. It does not have a correspondent in Proto Gunwinyguan, with the 'do' meaning. However it relates to the Proto Gunwinyguan inchoative paradigm set out in Table 15.

Table 15: Kamu 'do' and pGN 'inchoative'

Kamu	'do-PP'	*mi-ny*	pGN	'inch-PP'	**-me-ny ~ -mi-ny*
	'do-PI'	*mi-ni*		'inch-PI'	**-me-n-iny*
	'do-PR'	*mi-n*		'inch-NP'	**-me-n*

The suffixal correspondences are unproblematic. Kamu has lost the final consonant of the Past Imperfective inflection. This is a regular pattern: all Kamu Past Imperfective forms with a Proto Gunwinyguan correspondent lack the final consonant reconstructable for this tense in Proto Gunwinyguan. There is some difference in the root vocalism. Though /e/ is the predominant root vowel in all Gunwinyguan languages, /i/ is widely found in the Past Perfective. Kamu appears to have extended this /i/ throughout the paradigm. Considerations of vowel harmony in the Past Imperfective may have played a role in this extension.

The correspondence in meaning is less problematic than initially appears. The 'inchoative' has a wider range of uses in Gunwinyguan languages than simply inchoativisation. Some of these uses include 'do' meanings (Alpher, Evans & Harvey this volume). Further, many northern languages use a 'do' verb as an inchoative (e.g. Gaagudju, Larrakia, Limilngan).

I now turn to consider the 'spear' verb, which is reflexed in Matngele as some TAM values of the 'do' verb.

(23)

	Kamu	pGN
'spear-PP'	*rta-m*	**ra-m*

The Kamu and Proto Gunwinyguan forms for 'spear-PP' correspond in all relevant aspects: root-form, suffixal form, and inflectional category marked by the suffix. There is a correspondence between morpheme-initial apical stop /t/ in Kamu and /*r/ in Proto Gunwinyguan attested in another relatively widespread and reasonably basic correspondence

set (Kamu *tak* 'camp', **rak* 'camp' — Harvey this volume, Chapter 8). The paradigm of 'to spear' is defective in Kamu, and as such lacks correspondents for the other forms reconstructable for the Proto Gunwinyguan paradigm (see §3.5 of Alpher, Evans and Harvey, this volume): **re-n-iny* (Past Imperfective) and **re-n* (Non-Past).

However the Matngele 'do' verb does have a somewhat irregular Past paradigm which shows a correspondence with the Proto Gunwinyguan Non-Past **re-n*, most clearly in the *rte-n* portion of the 3minS form *Ø-rte-n-ek*.

Table 16: Matngele 'do'

1minS	*a-rtimi-n-ek*
1+2minS	*ampö-rtimi-n-ek*
2minS	*eny-mi-n-ek*
3minS	*Ø-rte-n-ek*
1augS	*err-mi-n-ek*
2augS	*nungkurr-me-n-ek*
3augS	*pörr-me-n-ek*

In the other Matngele paradigms, the Past historically consists of the Present + a suffix **-ak*. The 'do' verb does not have a Present tense, but the Past appears historically to have been formed the same way as the other Past tenses in Matngele. Therefore, removing the **-ak* suffix (in this case *-ek*), the remaining material is historically a Present.

The irregularity in this paradigm lies in the form of the root which varies between *rte ~ rtimi ~ mi ~ me,* representing a historical collapse of two distinct verbs. The *mi* form found in the 2minS and 1augS forms corresponds directly to the Kamu root *mi* 'do'. The *-n* Present tense suffix also corresponds directly with the Kamu Present tense suffix *-n* found in the paradigm of the *mi* 'do' verb. The Matngele paradigm therefore involves reflexes of a Proto Eastern Daly form **mi-n* 'do-PR'. The *me* variant found with the 2augS and the 3augS probably reflects a vowel harmony to the following *-ek* suffix.

The *rte-n* form found in the 3minS, on the other hand, corresponds directly to the Proto Gunwinyguan Non-Past root form: **re-n*. The *rtimi-n* form found in the 1minS and the 1+2minS shows *-mi-n* suffixation (Table 4 and example (19)). As such the Matngele Past tense appears to derive from a variety of sources, and further research is required to determine how these sources came to be conflated. The relevant point for the purposes of this paper is that the 3minS form, at least, provides a direct correspondent for the Proto Gunwinyguan Present **re-n*.

I now turn to consider three interrelated verbal paradigms: 'to see', 'to see-detransitiviser', and 'detransitiviser'.

Table 17: Kamu and pGN 'see'

Kamu			pGN		
	'see-PP'	*ne-ng*		'see-PP'	**na-y ~ *na-ng*
	'see-Fut/Con'	*na*			
	'see-detr-PP'	*na-cci-ng*		'see-recip-PP'	**na-nyci-ny*
	'detr-PP'	*yicci-ng*		'recip-PP'	**-nyci-ny*
	'detr-PI'	*yicci-ni*		'recip-PI'	**-nyci-n-iny*

The forms in Table 17 argue that the original vowel of the 'see' root in Kamu was an /a/ vowel, rather than an /e/ vowel. Kamu shows an /a/ vowel in the Future and Conditional forms of 'see' and throughout the 'see-detr' paradigm (Table 1). The 'see-detr' paradigm provides good evidence for an original /a/ vowel. Firstly, if /e/ was reconstructed as the original vowel then it would be necessary to posit a change of **ne-cci* > *na-cci*. A deletion of a [front/coronal] specification on a vowel in the environment of preceding and following [coronal] consonants lacks plausibility, and indeed if anything the reverse would be predicted (**na-cci* > *ne-cci*). Therefore we may reconstruct the original correspondences between Kamu and Proto Gunwinyguan Past Perfectives in (24).

(24)		Kamu	pGN
	'see-PP'	**na-ng*	**na-y* ~ **na-ng*

The /e/ vowel found synchronically in the Kamu Past Perfective form would arise through assimilation to the coda /ng/, which is a [+high] consonant and thereby favours raising (see also Table 22, following).

The principal issue in considering the correspondences between the Kamu detransitiviser forms, and the Proto Gunwinyguan reciprocal is the Kamu independent verb form of the detransitiviser *yicci*. The reciprocal may be reconstructed as a suffix at some considerable time depth (Alpher, Evans & Harvey this volume). The suffixal allomorph of the detransitiviser *-cci*, found with the 'see' verb may be related to the Proto Gunwinyguan **-nyci* in a standard way. Assimilations of a homorganic nasal–stop cluster to a geminate stop are quite common cross-linguistically (Ngalakgan and Rembarrnga show an assimilation of **-nyci* > *-cci* among the Gunwinyguan languages).

Given that the reciprocal can be reconstructed as a suffix, its appearance in one allomorph as an independent verb in Kamu requires consideration. Monosyllabic verbal suffixes do not usually develop diachronically into disyllabic verbal roots. Rather, it would seem likely that the *yicci* allomorph of the detransitiviser consists historically of a verb root **yi*, not now attested in Kamu, and the detransitiviser suffix *-cci*. There is evidence in in Dalabon and Wagiman for a **yV* verb root with the meaning 'do, say'.

Table 18: Dalabon and Wagiman 'do, say'

	Dalabon	Wagiman
PP	*yi-ny*	*ya(qa)-ny* ~ *yama-ny*
PI	*yi-n-iny*	*ya(qa)-yi* ~ *yama-yi*
PR	*yi-n*	*(y)a* ~ *yama*

Wagiman is structurally very similar to Kamu and Matngele. There are however some important differences, two of which are significant for the purposes of this paper. In Wagiman verbs show prefixal cross-reference for Objects, as well as Subjects. Verbs inflect as either transitive (with Object cross-reference), or intransitive (with only Subject cross-reference). The single exception is the 'do' verb *ya(q)(ma)*, which freely inflects both transitively and intransitively. Wagiman also differs from Kamu in that the Wagiman detransitivising suffix *-ci* may be added to any transitive verb, including the 'do' verb *ya(q)(ma)*.

(25) *Paneng-nga ku-yama-ci-n-kucu.*
Wagiman what-IMPF 2augS-say-detr-PR-pair
'What are you pair saying to each other?'

Deriving the Kamu *yicci* allomorph of the detransitiviser from a 'do/say+detransitiviser' combination parallel to (25) would also correlate with the fact that the *yicci* detransitiviser is mostly used to describe controlled as opposed to uncontrolled detransitivised situations, (10) and (11). Consequently, I propose to treat the suffixal allomorph *-cci*, and the *cci* portion of *yicci* as cognate with the Proto Gunwinyguan reciprocal **-nyci*. We may now turn to consider another verb paradigm, that of 'hit'.

Table 19: Kamu and pGN 'hit'

	Kamu	pGN
PP	*mu*	**po-m*
PI	*wu-nu*	**pu-n-iny*
PR/NP	*wu-N-pe-n*	**pu-n*

In this case it does not appear that the Past Perfective forms correspond. The Past Imperfective forms, on the other hand, do appear to correspond. The Kamu form reflects a lenition of root-initial **b* > *w*, and the operation of vowel harmony (a pervasive process in the Kamu verbal paradigms; Harvey n.d.).

The lenition is also attested with the Present form of 'hit', *wu-N-pe-n*. However the Present form of the 'hit' verb raises additional matters for consideration. The full paradigm for 'hit-PR' is set out in Table 20.

Table 20: Full paradigm for Kamu 'hit-PR'

	hit-PR	hit-PR minus final *-pe-n*
1minS	*e-wu-**m**-pe-n*	*e-wu-**m***
1+2minS	*emny-u-**ny**-pe-n*	*emny-u-**ny***
2minS	*eny-u-**ny**-pe-n*	*eny-u-**ny***
3minS	*ku-wu-**m**-pe-n*	*ku-wu-**m***
1augS	*e-rr-u-**n**-pe-n*	*e-rr-u-**n***
2augS	*nungku-rr-u-**n**-pe-n*	*nungku-rr-u-**n***
3augS	*ku-rr-u-**n**-pe-n*	*ku-rr-u-**n***

The salient point about this paradigm is the place specification of the medial nasal. As illustrated in the rightmost column of Table 20, this depends on the place specification of the preceding consonant and not on the place specification of the following stop. It is altogether implausible that this kind of non-local harmony could exist if the *-pe-n* portion of the paradigm had always formed part of the paradigm, and been available as a local harmony target. Rather it must reflect a stage when *-pe-n* did not form part of the paradigm of 'hit-PR'.

The reconstructed paradigm in Table 20 may be related to the Proto Gunwinyguan Non-Past form **pu-n*, allowing for a somewhat unusual assimilation of an original **-n* in

Kamu. This leaves the question of the *-pe-n* augment which occurs synchronically in this paradigm in Kamu. We have already seen that the Present forms of other verbs in Kamu have been augmented by suffixation of the Present form *-mi-n* of 'to do' (Table 4 and (19)). There is reason to believe that the *-pe-n* augment has the same origin. The form *-pe-n* would be a standard present tense form for a monosyllabic verb **pe*. No such verb is synchronically attested in Kamu. However, a monosyllabic verb *pe* 'to build, to make' with precisely the required *-n* suffix in the NP is attested in the Gunwinyguan language Jawoyn (Merlan n.d.).

Table 21: The verb *pe* 'to build, to make' in Jawoyn (Gunwinyguan)

PP	*pe-m*
PI	*pe-nay*
NP	*pe-n, pen-pe-n*
IMP	*pe*

Therefore I suggest that the *-pe-n* augment found in the Present paradigm of 'to hit' in Kamu is a reflex of the Non-Past form of the verb **pe* 'to build, to make', which is now lost as an independent verb other than in Jawoyn.

There is one difference between the suffixation of *-pe-n* and the suffixation of *-mi-n*. The *-pe-n* augment attaches to an inflected verb form, whereas the *-mi-n* augment attaches to the verb root in Kamu. However, comparison with Matngele suggests that *-mi-n* also was originally attached to an inflected verb form. The only Matngele form showing *-mi-n* suffixation is *ku-wan-mi-n* '3minS-burn-PR', which corresponds to the Kamu *ku-wa-mi-n*. The Proto Eastern Daly for '3minS-burn-PR' is presumably to be reconstructed as **ku-wan-mi-n*.

In terms of manner of articulation, nasal+stop clusters are less marked than nasal+nasal clusters (Hamilton 1996:155–159). It is therefore unsurprising that Kamu would reduce the /nm/ cluster in **ku-wan-mi-n*, while preserving the /Np/ clusters in the Present tense of 'to hit'. In Kamu, the 'burn' verb root varies between *wa* and *wari*. As such, it does not appear that the first /n/ in **ku-wan-mi-n* historically formed part of the verb root. It seems most likely that this /n/ was originally a Present tense suffix, attaching directly to the root allomorph **wa*. The Present tense suffix for the 'do', 'sit' and 'spear' verbs in Proto Eastern Daly was **-n*. In the case of the 'do' and 'spear' verbs, this Present tense suffix is reconstructable for the ancestor common to Proto Eastern Daly and Proto Gunwinyguan. If the Proto Eastern Daly form is to be analysed morphologically as **ku-wa-n-mi-n*, then *-mi-n* suffixation was originally parallel to *-pe-n* suffixation. Both involved the suffixation of Present tense stems to the fully inflected Present tense forms of other verbs.

There is one other verbal paradigm which also appears to have involved the *-pe-n* augment; the paradigm of 'to get'.

Table 22: pGN 'get' and Kamu 'get', which also appears to have involved *-pe-n*

	Kamu	pGN
'get-PP'	*ma-y*	**ma-y*
'get-PR/NP'	*me-ng-ke-n*	**ma-ng*
'get-Fut/Con'	*ma*	

As with a number of other paradigms the Past Perfective forms correspond. The Present tense form *me-ng-ke-n* parallels the Present tense form of the 'hit' verb *wu-N-be-n.* The first syllable [meng] corresponds straightforwardly to the Proto Gunwinyguan Non-Past **ma-ng.* These two parallelisms may be accounted for if the Kamu Present form is analysed as involving an augment *-ke-n.* This augment *-ke-n* may be derived from the *-pe-n* augment found with 'hit-PR', by an entirely standard place assimilation: **me-ng-pe-n* > *me-ng-ke-n.* The /e/ vowel of the Present form in Kamu presumably reflects a raising from an original **a* (cf. (24) **na-ng* > *ne-ng*). The Kamu paradigm otherwise shows an /a/ vowel, as does Proto Gunwinyguan.

While Matngele does not have a 'get' verb or a 'hit' verb, it does provide lexicalised evidence that this partial suppletion is to be assigned to Proto Eastern Daly. One of the important myths located in territory owned by people with a primary affiliation to Matngele is a fire story. The principal protagonists in this story are the dingo and the chickenhawk. The Matngele lexemes for dingo and chickenhawk are set out in (26) and (27).

(26) *(Camarr)* *yim-tiny.*
dog fire-ABL
'dingo' (lit. '(the dog) from the fire')

(27) *Yim-ku-me-ng-ke-n.*
fire-3minS-get-Augment-PR
'chickenhawk' (lit. 'It is getting fire.')

The lexeme for 'chickenhawk' is a compound historically involving the Present tense of the 'get' verb. This Present tense form is identical to that found in Kamu.

The remaining verbs which show a correspondence with Proto Gunwinyguan verb forms are the three stance verbs: 'to lie', 'to sit' and 'to stand'. The 'sit' verb shows the most straightforward correspondences.

Table 23: Kamu and pGN 'sit'

	Kamu	pGN
'sit-PP'	*ni-nginy*	**ni-nginy*
'sit-PI'	*ni*	**ni-ny*
'sit-Subj'	*na-y*	
'sit-Pres'	*nö/e-n*	**ni*
'sit-Fut/Con'	*ni-ng*	

The correspondence between the Kamu and Proto Gunwinyguan Past Imperfective forms is the standard correspondence, with Kamu having lost the final nasal. The Past Perfective forms also evidently correspond, though in this case Kamu has not lost the final nasal. As we will see, the same pattern is found with the other two stance verbs. The final nasal is lost in the Past Imperfective, as it is generally, but it is preserved in the Past Perfective. The stance verbs are the only verbs in Kamu that have a final /ny/ in the Past Perfective. The Kamu Present form does not relate to the Proto Gunwinyguan Non-Past form. No other language has an *-n* Present tense for the 'sit' verb, nor for the other two stance verbs. The other two Kamu stance verbs have *-Ø* Present tense forms. The Kamu 'sit-PR' form is probably an

analogic reformation, based on the fact that *-n* is the most common Present tense suffix in Kamu.

The 'lie' verb (Table 24) shows similar correspondence to those of the 'sit' verb.

In this case the root correspondence is unproblematic. Kamu has an /o/ vowel in only a few items, evidently recent borrowings from Wagiman. The change **o* > *u* is the predicted change, given the essential absence of /o/ from the Kamu segmental inventory. The Kamu Past Imperfective form has lost the final **y*, and has a *-Ø* suffix, as do the other two stance verbs in the Past Imperfective. The Past Perfective forms show essentially the same correspondence found with the 'sit' verb. There are two additional complications, with the Kamu Past Perfective showing a reduced monosyllabic variant, and the longer disyllabic variant showing vowel harmony from the root to the suffix. The Kamu Present and Proto Gunwinyguan Non-Past forms correspond directly.

Table 24: Kamu and pGN 'lie'

	Kamu	pGN
'lie-PP'	*yu-(ngu)ny*	**yo-nginy*
'lie-PI'	*yu*	**yo-y*
'lie-Subj'	*ni*	
'lie-Pres'	*yu*	**yu-Ø*
'lie-Fut/Con'	*yu-ng*	

The correspondences of the 'stand' verb are rather more problematic than those for the other two stance verbs.

Table 25: Kamu and pGN 'stand'/'be standing'

	Kamu	pGN 'to stand'	pGN 'to be standing'
'stand-PP'	*tta-ny*	**thi-Ø*	**tha-nginy*
'stand-PI'	*tti*	**thi-ny*	**tha-ny*
'stand-Subj'	*tta-y*		
'stand-Pres'	*ttu*	**thi-Ø*	**tha-ngen*
'stand-Fut/Con'	*tta-ng*		

There is evidence for two 'stand' paradigms among the Gunwinyguan languages. If the Kamu 'stand' forms are cognate, then the correspondences appear to involve both paradigms. The root vocalism of the Kamu paradigm varies considerably. The variation between /a/ and /i/ could be explained by conflation of the two 'stand' paradigms, one of which has /a/ and the other of which has /i/.

The Kamu 'stand' verb has an initial geminate /tt/. It is possible that an apical could be the reflex of a historical laminal, and such correspondences are attested among the Gunwinyguan languages. However, there is very little evidence on Kamu reflexes of **th*. The only cognate involving **th* is **tharr* 'thigh' which is reflexed in Kamu as *cerri*, with a laminal reflex. This suggests that the initial consonant of the Kamu form is not related to the Proto Gunwinyguan forms. On the other hand, there is evidence of general irregularity in the reflexes of **th*, between apicals and laminals (Harvey this volume, Chapter 8). Therefore,

the Kamu initial consonant might be an irregular reflex. No explanation can, however, be given for the fact that the initial consonant is a geminate, and not a singleton.

The Kamu Past Perfective *tta-ny* might be a reflex of **tha-nginy*, with a reduction to a monosyllable, parallel to the option found with the 'lie' verb in Kamu. The Kamu Past Imperfective *tti* is a regular reflex of **thi-ny*, in terms of the loss of the final nasal. The Kamu Present *ttu* cannot be related to any Proto Gunwinyguan form. Overall, the relationship of the Kamu 'stand' verb to the Proto Gunwinyguan 'stand' forms must be viewed as significantly less well established than any of the other relationships between Kamu verb forms and Proto Gunwinyguan verb forms.

This completes examination of the relationships between the verb paradigms of Eastern Daly and Proto Gunwinyguan. An overview of the relationships that have been established in the preceding discussion is provided in Table 26.

Table 26: Overview of the relationships that have been established

Level of Support		Kamu	pGN
A. Well supported	'detr/recip-PP'	*-cci-ny*	**-nyci-ny*
	'detr/recip-PI'	*-cci-ni*	**-nyci-n-iny*
	'do/inch-PP'	*mi-ny*	**-me-ny ~ mi-ny*
	'do/inch-PI'	*mi-ni*	**-me-n-iny*
	'do/inch-NP/PR'	*mi-n*	**-me-n*
	'get-PP'	*ma-y*	**ma-y*
	'get-PR/NP'	*me-ng-ke-n*	**ma-ng*
	'hit-PI'	*wu-nu*	**pu-n-iny*
	'hit-PR/NP'	*wu-N-pe-n*	**pu-n*
	'lie-PP'	*yu-(ngu)ny*	**yo-nginy*
	'lie-PI'	*yu-Ø*	**yo-y*
	'lie-NP/PR'	*yu-Ø*	**yu-Ø*
	'see-PP'	*ne-ng*	**na-ng*
	'sit-PP'	*ni-nginy*	**ni-nginy*
	'sit-PI'	*ni-Ø*	**ni-ny*
	'spear-PP'	*rta-m*	**ra-m*
	'spear-PR/NP'	*rte-n-ek* (Matngele)	**re-n*
B. Possible	'stand-PP'	*tta-ny*	**tha-nginy*
	'stand-PI'	*tti*	**thi-ny*

Apart from establishing the antiquity of particular forms within the Kamu verbal paradigms, the comparison with Proto Gunwinyguan also establishes that the Eastern Daly oppositions between the Past Perfective, Past Imperfective and Present/Non-Past tenses are of the same antiquity.

7 Verbal structures in the Eastern Daly and Gunwinyguan

The evidence presented so far establishes the structure in (28) for verbs in the proto-language ancestral to Proto Eastern Daly and Proto Gunwinyguan.[3]

(28) verb root(–Detransitiviser)–Tense Suffixes

The verb template would also have included a slot for pronominal prefixes, minimally Subject prefixes (Harvey this volume, Chapter 16). Therefore, the verbal template may be amended to that in (29).

(29) Subject Prefix–verb root(–Detransitiviser)–Tense Suffixes

While the Eastern Daly and Gunwinyguan languages share this common inheritance in verbal structures, the standard verbal structures of the two groups diverge considerably. To illustrate the differences, we may compare the Kamu and Warray forms for 'we washed them'. The Kamu structure is set out in (30).

(30) *Curric=wun=a-rru-ma-y.*
wash=3augDO=1S-augS-get-PP
'We washed them.'
Coverb root=Object enclitic=Encliticised verb in auxiliary function

This nature of this structure and of possible variations to it, were discussed in §2. The structure standardly found in the Gunwinyguan languages, as exemplified by Warray, is very different.

(31) *I-pin-wurlek-mi-ny.*
1plS-3plO-wash-Aux-PP
'We washed them.'
Subject prefix–Object prefix–Coverb root–Auxiliary verb root–Tense suffix

Apart from the obvious differences in ordering, there are other significant differences between the Warray and Kamu verbal structures. There is no possibility of pause placement within the Warray structure, nor can the elements be reordered. The Warray structure in (31) is therefore a straightforward compounding template. All Gunwinyguan languages have a compounding template with this structure (allowing for some variation in the respective ordering of Subject and Object prefixes). The compounding template may be reconstructed for Proto Gunwinyguan (Harvey this volume, Chapter 8). None of the Gunwinyguan languages permit pause placement within the compound template. However a number of the Gunwinyguan languages do show an alternative ordering which is very similar to that found in Kamu and Matngele. The following example is from Ngalakgan (Merlan 1983:130).

(32) *Rtulq yirr-ki-ka-n.*
light 1exS-3guO-Aux-PR
'We are lighting it.'
Coverb root Subject prefix–Object prefix–auxiliary verb root–Tense suffix

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3 Further research is required to determine whether this higher level proto-language involves other languages or language families.

In (32), the coverb root occurs as an independent phonological word preceding the other verbal constituents (whose ordering is as in (30)). The more common form would be *yirr-ki-rtulq-ka-n*, with the ordering exactly as in (31). There is no difference in lexical meaning between the standard and alternative constructions. The differences between the two appear to relate to concerns of register and information structuring. Constructions with the alternative ordering illustrated in (32) also occur in Jawoyn (Merlan n.d.), Kungarakany (Evans 1989), Bininj Gun-Wok (Evans 2003), Ngandi (Heath 1978:90–91), Rembarrnga (McKay 1975:165–170), and Warray. Constructions with this alternative ordering are rare in Bininj Gun-Wok and Warray.

The fact that both combinations: $[\text{Coverb}]_{wd}$ + $[\text{Pref–Verb–Tns}]_{wd}$, and $[\text{Pref–Coverb–Verb–Tns}]_{wd}$ are found in a number of Gunwinyguan languages, without any difference in lexical meaning, argues that the differences between the standard Gunwinyguan and standard Eastern Daly structures are less than they initially appear to be. Both structures can be viewed as particular expressions of the cross-linguistic tendency for verbal constructions to have two parts formally: a non-finite part conveying the lexical verbal meaning, and an auxiliary part conveying agreement and tense/mood/aspect.

There are a number of hypotheses as to verbal structures in the common proto-language, ancestral to both the Gunwinyguan and the Eastern Daly languages. It is quite possible that this common proto-language allowed for both types of constructions, as does Mangarrayi synchronically (Merlan 1982:123–129). Alternatively, the common proto-language may have had only one of the construction types, and the other construction type developed as a standard, motivated alternation. A third possibility is that the common proto-language had some other type of verbal structure, from which both of these construction types are developments. Whatever the situation in the common proto-language, the Eastern Daly and Gunwinyguan languages have chosen different types for their standard verbal constructions.

This is not the only systematic difference in diachronic verbal patternings between the two language families. I have argued that the central influence on the evolution of both the Kamu and the Matngele verb systems has been a long term tendency to restrict verbs to copulative and quasi-copulative functions. This tendency is most evident in Kamu in the tense and person-based patterns of defectiveness, suppletion, and alternation which characterise the verb paradigms. The tendency has essentially attained its ultimate expression in Matngele, apparently via the patterns which synchronically characterise Kamu.

This pattern of development contrasts saliently with that found among the Gunwinyguan languages. The Gunwinyguan languages do not show any tendency for verbs to be restricted to copulative and quasi-copulative functions. Neither are defectiveness or suppletion characteristic of the evolution of verb systems among the Gunwinyguan languages, though limited examples of each do occur. It might appear that the differences in standard verbal constructions relate to differences in the evolution of verbs between the two language families.

However, there are many languages of northern Australia which have verbal structures analogous to those of the Eastern Daly languages. The verb systems of these languages are not characterised by a tendency towards functional restriction to copulative and quasi-copulative functions. Therefore it does not appear that there is any correlation between the combinatorial patterns of verbs and coverbs, and the diachronic patterns of defectiveness, suppletion and alternation found in the verb systems of the Eastern Daly languages.

Indeed in terms of the presently available evidence, it appears that the restriction towards copulative and quasi-copulative functions which has characterised the evolution of the Eastern Daly verb systems must be viewed as an essentially language-specific pattern. It is undoubtedly an areal pattern as it involves the Northern Daly languages, but its ultimate motivations require further investigation.

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7 *The evolution of object enclitic paradigms in the Eastern Daly language family*

MARK HARVEY

This paper examines the development of pronominal Object enclitic paradigms in the two members of the Eastern Daly language family: Kamu and Matngele. Information on the verbal structures of Kamu and Matngele, where these enclitics occur, is provided in Harvey (this volume, Chapter 6). For the purposes of this paper, the principal point to be noted concerning verbal structures in Kamu and Matngele is that there are prefixes to verbs which cross-reference the Subject. However, there are no prefixes which cross-reference Objects, and none can be reconstructed for Proto Eastern Daly. All cross-reference to Objects is via the Object enclitic paradigms. The Object enclitic paradigms of the two languages are obviously related to one another, and further some of the enclitic forms are also evidently related to the corresponding free pronouns.

However, the relationships both of the various Object enclitic paradigms to one another and of the Object enclitic paradigms to the free pronouns present considerable complexities. In order to unravel these complexities, it is necessary to examine a wide range of factors which are of importance in the evolution of Object enclitics generally. Comparison of Kamu and Matngele is of particular interest in elucidating some of the possible interactions between the various factors. The Kamu free pronoun, Direct and Indirect Object enclitic paradigms are set out in Table 1.

Table 1: Kamu free pronouns; Direct and Indirect Object enclitics

	Free Pronoun	Direct Object Enclitic	Indirect Object Enclitic
1min	*nguru*	*=ngu*	*=akkurnung*
1+2min	*ngemu*	*=ngam*	*=rnay*
2min	*nungkurr*	*=niny*	*=rnun*
3min	*kurna*	*=Ø/=rnung*	*=Ø/=rnung*
1aug	*ngerru*	*=wan*	*=warr*
1+2aug	*ngerru*	*=anan*	*=arrarr*
2aug	*nungkurr*	*=nungkun*	*=nungkurr*
3aug	*kurna(=wurr)*	*=wun*	*=wurr*

Nicholas Evans, ed. *The non-Pama-Nyungan languages of northern Australia: comparative studies of the continent's most linguistically complex region*, 185–201.
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In the augmented number, the Kamu Direct and Indirect Object enclitic paradigms are related by an unusual /n/ – /rr/ consonantism. We shall return to consider this consonantism later in this paper. The Matngele free pronoun and Object enclitic paradigms are set out in Table 2.

The free pronoun paradigms of the two languages are almost identical. The only difference between the two is that the form *nungkurr* has extended its range in Kamu from the 2aug to include the 2min. Historically this is a common change in pronoun paradigms. There is no doubt that *nungkurr* was originally an exclusively 2aug form. As shown in (1) and (2), it is an exclusively aug form in the Object enclitic paradigms of both Kamu and Matngele. It functions as the 2aug form in the Subject prefix paradigms to verbs in both Kamu and Matngele. It also functions as the 2aug form in the neighbouring Northern Daly languages: MalakMalak and Guwema.

Table 2: Matngele free pronoun and Object enclitic

	Free Pronoun	Object Enclitic
1min	*nguru*	*=awa*
1+2min	*ngemu*	*=rney*
2min	*wangarri*	*=ninyci*
3hum min	*kurna*	*=rnung*
3other min	(no form)	(no form)
1aug	*ngarru*	*=arr*
1+2aug	*ngarru*	*=arrarr*
2aug	*nungkurr*	*=nungkurr*
3aug	*kurna(=wurr)*	*=wurr*

Kamu and Matngele differ significantly in their Object enclitic paradigms. Kamu has two paradigms, whereas Matngele has only one paradigm which broadly covers the functional ranges of both the Kamu Object enclitic paradigms. Before examining the historical relationships between the Kamu and Matngele paradigms, it is necessary to consider the distinction between affixation and clisis in Kamu and Matngele. This distinction is of central importance in considering the development of bound pronominals generally, and the Object enclitic paradigms in particular.

The distinction between relationships of clisis and those of affixation in Kamu and in Matngele may be drawn on a number of grounds. The following examples from Kamu illustrate the contrast (clisis is indicated by the equals sign, and affixation by the hyphen).

(1) a. *Tey=niny=e-ne-ng.*
see=2minDO=1minS-see-PP
'I saw you.'

b. *Tey=e-ne-ng=niny.*
see=1minS-see-PP=2minDO
'I saw you.'

(2) a. *Wart=rnun=a-rta-m.*
send=2minIO=1minS-Aux-PP
'I sent it to you.'

b. *Wart=a-rta-m=rnun.*
send=1minS-Aux-PP=2minIO
'I sent it to you.'

Morphemes bound by clisis allow for alternate orderings: the (a) and (b) orderings in (1) and (2) are equally acceptable. Morphemes bound by affixation appear in only one ordering. Morphemes bound by clisis can also alternatively appear as independent words (any of

the = signs in (1) and (2) could be replaced by a pause). This is not possible with affixation. Affixes may show lexically controlled allomorphy: the 1minS prefix shows a lexically controlled variation between *e-* in (1) and *a-* in (2). Clitics in Kamu and Matngele do not exhibit lexically controlled allomorphy.

The reconstruction of Object enclitics for Proto Eastern Daly raises issues both in the relationship of forms, and in the reconstruction of functions. We may begin by considering the marking of Objects in languages ancestral to the Eastern Daly languages. As previously stated, Object enclitics are the only form of Object marking that can be reconstructed for Proto Eastern Daly. This form of Object marking cannot be reconstructed for any more remote ancestral proto-language.

However Proto Eastern Daly is related to the non-Pama-Nyungan languages generally through its Subject prefixes (Harvey this volume, Chapter 16), and to Proto Gunwinyguan more specifically through it verbal system (Harvey this volume, Chapter 6). Both for the non-Pama-Nyungan languages generally, and for Proto Gunwinyguan more specifically, transitive prefixing, with cross-reference for Objects, can be reconstructed (Heath 1976, 1987). Therefore, transitive prefixing may be reconstructed for some proto-language, ancestral to the two Eastern Daly languages. Consequently, the Eastern Daly Object enclitic systems may be viewed historically as having replaced the previous system of transitive prefixing.

Among the non-Pama-Nyungan languages, there are two types of transitive prefixing systems. One type allows for the cross-reference of Indirect, as well as Direct, Objects, with an applicative prefix which indicates that the Object is Indirect rather than Direct. This type may be illustrated the following pair of sentences from Warray.

(3) *Catpula-yi warri-pa pun-na-y muya mi pikirring-u.*
old.man-ERG child-PL 3plO-see-PP tucker got 3pl-DAT
'The old man saw the kids and got tucker for them.'

(4) *Catpula-yi warri-pa pun-na-y muya pun-nat-mi.*
old.man-ERG child-PL 3plO-see-PP tucker 3plO-IO-got
'The old man saw the kids and got them tucker.'

As shown in these two examples, the goal/recipient argument of the verb 'to get' may be coded in two ways. In (3), it is expressed by a free pronoun *pikirring-u*, which bears dative case marking. In (4), it is expressed by a prefix to the verb *pun-*. This prefix also cross-references the 'seen' argument of the verb 'to see'. The applicative Indirect Object prefix *nat-* indicates that the *pun-* prefix cross-references the goal/recipient argument of *get*, rather than the patient argument. A form lacking the Indirect Object prefix *pun-mi* would have to be interpreted as 'got them', where the prefix *pun-* would cross-reference a patient argument.

The other type of transitive prefixing system does not allow for the cross-reference of Indirect Objects, and has no equivalent of (4). The languages to the south and east of Kamu and Matngele: Wagiman, Jaminjung, Wardaman, are languages of this second type. These languages all have paradigms of dative free pronouns, in addition to paradigms of base free pronouns. Some or all of the forms in these dative paradigms cannot be analysed as regularly consisting of the corresponding base + the dative case marker. This may be illustrated with the Wardaman paradigms (Merlan 1994:108, 114 — the Wardaman dative case marker is *-u* /*k*_, *-ku*/[-cont]_, *-wu*/[+cont]).

Table 3: Wardaman base and dative free forms

	singular	dual	plural
1-base	*ngayuku*	*yawung-kuya*	*ngarruk*
1-dative	*nganu*	*yawu*	*ngarruk-u*
1EX-base		*yirruk-kuya*	*yirruk*
1EX-dative		*yirruk-u-wuya*	*yirruk-u*
2-base	*yinyang*	*nurruk-kuya*	*nurruk*
2-dative	*yingki*	*nurruk-u-wuya*	*nurruk-u*
3-dative	*kunga*	*wurruku-wuya*	*wurruku*

In Jaminjung, these dative pronouns are commonly encliticised to verbs. In Wagiman, they are more rarely encliticised. In some languages, such as Gaagudju (Harvey 1992:333–338) and Patjtjamalh (Ford 1990:101–102), Indirect Objects are the only types of arguments that can be cross-referenced by pronominal enclitics. Direct Objects in these two languages are cross-referenced by pronominal prefixes. There are no languages in Australia where the converse occurs: Direct Objects are cross-referenced by enclitics and Indirect Objects are cross-referenced by affixes. It does not appear that there any languages in the world which have this converse pattern. Therefore it would appear that if a language has a single set of Object enclitics, then that set of enclitics will minimally cross-reference Indirect Object functions. It may or may not also cross-reference Direct Object functions.

Neither Kamu nor Matngele has a distinctive paradigm of dative free pronouns, though the dative case marker *-rnung* may freely be suffixed to the base pronouns. Nonetheless, it would seem likely that the Eastern Daly Object enclitic paradigms originated through the enclisis of free pronouns in a dative/indirect Object function. In order to reconstruct the enclitic paradigm at this starting point, it is helpful to examine the functioning of the two paradigms in Kamu. This comparison illustrates a number of the factors which are relevant in the reconstruction of the Object enclitic paradigms. As an examination of Table 1 reveals, Object enclitics in the 3min category pattern differently from those in the other person categories in Kamu. The differences are illustrated in the following examples.

(5) *Tey=ngu=Ø-ne-ng.*
see=1minDO=3minS-see-PP
'He saw me.'

Tey=Ø=Ø-ne-ng.
see=3minO=3minS-see-PP
'He saw him.'

(6) *Tey-ma=ngu=ku-yang.*
see-IMPF=1minDO=3minS-go.PR
'He is looking at me.'

Tey-ma=Ø/rnung=ku-yang.
see-IMPF=3minO=3minS-go.PR
'He is looking at him.'

(7) *Tey-ma=ngu=ku-wu-y.*
see-IMPF=1minDO=3minS-Aux-SUBJ
'He wanted to see me.'

Tey-ma=Ø/rnung=ku-wu-y.
see-IMPF=3minO=3minS-Aux-SUBJ
'He wanted to see him.'

(8) *Ngang=ngu=kaniny.*
give=1minDO=3minS.go.PP
'He gave it to me.'

Ngang=rnung=kaniny.
give=3minIO=3minS.go.PP
'He gave it to him.'

(9) *Wart=akkurnung=Ø-rta-m.*
send=1minIO=3minS-spear-PP
'He sent it to me.'

Wart=rnung=Ø-rta-m.
send=3minIO=3minS-spear-PP
'He sent it to him.'

(10) *Ø-wa-rning=ngu.*
3minS-burn-PP=1minDO
'It burnt me.'

Ø-wa-rning=rnung.
3minS-burn-PP=3minIO
'It burnt him.'

(11) *Wa=akkurnung=kaniy.*
get=1minIO=3minS.go.PP
'He got it for me.'

Wa=rnung=kaniy.
get=1minIO=3minS.go.PP
'He got it for him.'

The patterns of Object cross-reference that occur with categories other than the 3min are summarised in (12).

(12) *Patterns of Object cross-reference for categories other than 3min*

A. The Objects of bivalent coverbs are cross-referenced by the Direct Object enclitics — (5)–(7).

B. The Dative Object of the trivalent coverb *ngang* 'to give' is cross-referenced by the Direct Object enclitics (the patient/theme argument does not normally receive cross-reference — (8)). The Dative Object of the trivalent coverb *wart* 'to send' is cross-referenced by Indirect Object enclitics (9).

C. Directly affected malefactive Objects are cross-referenced by the Direct Object enclitics (10), even though they are not subcategorised.

D. Other types of non-subcategorised Objects are cross-referenced by the Indirect Object enclitics (11).

It may be observed that it would not be particularly felicitous to describe the Indirect Object enclitics as Dative enclitics for the categories other than the 3min. The patterns of Object cross-reference that occur in the 3min category are summarised in (13).

(13) *Patterns of Object cross-reference for 3min*

A. In Past Perfective clauses, the Objects of bivalent coverbs are cross-referenced by =Ø (5).

B. In other types of clauses, the Objects of bivalent coverbs may be cross-referenced by =Ø or by *=rnung* (6 and 7).

C. All other types of Objects are cross-referenced by *=rnung* (8–11).

In contrast to the other person categories, it does not appear infelicitous to describe *=rnung* as a Dative Object enclitic (it functions as the Dative case marker in both Kamu and Matngele). In Matngele, this enclitic *=rnung* marks human Objects generally, rather than Dative Objects. The connection between the two usages is obvious: Dative Objects are nearly always human. The development of Dative Object markers into markers of human Objects generally is well attested (Hindi, Spanish). The reverse pattern of development, from a marker of human Objects to a marker of Dative Objects, is not attested. Consequently, it would appear that Kamu preserves the earlier pattern of usage of *=rnung*, and that **=rnung* may be reconstructed for Proto Eastern Daly as the '3min Dative Object' enclitic.

If we turn to the Augmented number, it may be observed that there is a virtual identity between the Kamu Indirect Object paradigm and the Matngele Object paradigm. Therefore the following augmented enclitics can be reconstructed.

Table 4: Reconstructed pED augmented enclitics

	Kamu IO	Matngele	pED
1aug	*=warr*	*=arr*	**=warr*
1+2aug	*=arrarr*	*=arrarr*	**=arrarr*
2aug	*=nungkurr*	*=nungkurr*	**=nungkurr*
3aug	*=wurr*	*=wurr*	**=wurr*

Of these enclitics, only the 2aug *=nungkurr* relates to the corresponding free base pronoun. It is possible that the augmented enclitics are derived from a paradigm of dative pronouns like that of Wagiman, Jaminjung and Wardaman, distinct from the base pronouns except in the 2aug. If there was such a paradigm, then it has been lost in Kamu and Matngele.

The situation with the other minimal categories; 1min, 1+2min, and 2min, is rather more problematic. As in the augmented number, the Kamu Indirect Object and Matngele Object enclitic correspond in a straightforward way (14).

(14)		Kamu IO	Matngele	pED
	1+2min	*=rnay*	*=rney*	**=rnay*

There also appears to be a relationship between the 1min forms (15). The 1min form *akkurnung* in the Kamu Indirect Object paradigm appears to consist historically of a form **akku* plus the Dative case marker *-rnung*. This **akku* form may relate to the Matngele form *awa*, as there are correspondences between continuants in Matngele, and both single and geminate stops in Kamu: e.g. Kamu *teperr* 'shoulder' vs Matngele *tewerr* 'shoulder', Kamu *appeny* 'brother' vs Matngele *eweny* 'sister'.

(15)		Kamu IO	Matngele	pED
	1min	*=akkurnung*	*=awa*	**=akku(-rnung)*

However, for both of these categories, the Kamu 1min and 1+2min Direct Object enclitics must be considered (16), as these appear to be reduced versions of the corresponding free pronouns, a not unexpected development for enclitics vis-a-vis free pronouns.

(16)	Free Pronoun	Direct Object enclitic
1min	*nguru*	*=ngu*
1+2min	*ngemu*	*=ngam*

The 1+2min enclitic preserves an earlier form of the first vowel than does the free pronoun (Harvey this volume, Chapter 10). This fact, and the irregular reduction of the two enclitics as compared to the pronouns, suggests that these two enclitics are also old and should be reconstructed for Proto Eastern Daly.

Further complications arise with the 2min category. In this category, the correspondence is between the Kamu Direct Object enclitic and the Matngele Object enclitic.

(17)		Kamu DO	Matngele	pED
	2min	*=niny*	*=ninyci*	**=ninyci*

In this case, there is also evidence for **niny(ci)* as a pronominal of some antiquity. The 2min free pronoun and General Object enclitic in Guwema are set out in (18).

(18)

	Free Pronoun	Object Enclitic
2min	*niny*	*=ninycu*

The Guwema forms suggest that a 2min pronominal with the form **niny(cu)* has been present in the Daly region for some considerable time. This is further supported by evidence from Marramaninjsji and Marrithiyel which have *nany* as their 2min free pronoun.

This is not the only case where an Eastern Daly Object enclitic corresponds to a pronominal form in another Daly language. The Kamu 2min Indirect Object enclitic *=rnun* corresponds to the Malak-Malak 2min Object enclitic *=nunu*. The MalakMalak free pronoun and Object enclitic paradigms are set out in Table 5.

Table 5: MalakMalak free pronouns and Object enclitics

	Free Pronoun	Object Enclitic
1min	*nga*	*=arriny*
1+2min	*yengki*	*=nungku*
2min	*wangarri*	*=nunu*
3m min	*yöntön*	*=nö*
3f min	*nöntön*	*=ngayi*
3other min	(no form)	(no form)
1aug	*yewöt*	*=yörrö*
1+2aug	*yerrkit*	*=arrpurru*
2aug	*nukut*	*=nungkurru*
3aug	*wörröntön*	*=wörrö*

There would appear to be two criteria which would support the reconstruction of enclitics in Proto Eastern Daly. One is correspondence in enclitic forms between Kamu and Matngele. The other is correspondence of an enclitic form to a Proto Eastern Daly free pronoun. In accordance with these two criteria, the following enclitics may be reconstructed for Proto Eastern Daly.

Table 6: Reconstructed pED Object enclitics

	1	1+2	2	3
min	**=ngu,*	**=ngam,*	**=ninyci*	**=Ø,*
	**=akku(-rnung)*	**=rnay*		**=rnung*
aug	**=warr*	**=arrarr*	**=nungkurr*	**=wurr*

There are two interrelated questions which arise in relation to this reconstructed paradigm. One is the distinction between the two forms which are reconstructable for the 1min and the 1+2min. The other is how the Kamu and Matngele paradigms might be related to this set of reconstructed enclitics. Given that a distinction between the two forms in the 1min and 1+2min appears only in Kamu, the most straightforward reconstruction is that Kamu

preserves the original distinction between the forms, with **=ngu* and **=ngam* having been Direct Object enclitics and **=akku(-rnung)* and **=rnay* having been Indirect Object enclitics.

Table 7: Reconstructed pED Indirect and Direct Object enclitic contrasts

1min Direct Object	**=ngu*
1min Indirect Object	**=akku(-rnung)*
1+2min Direct Object	**=ngam*
1+2min Indirect Object	**=rnay*
2min Object (Direct ? and Indirect)	**=ninyci*
3min Dative Object	**=rnung*
3min Non-dative Object	**=Ø*
1aug Object (Indirect ? and Direct)	**=warr*
1+2aug Object (Indirect ? and Direct)	**=arrarr*
2aug Object (Indirect ? and Direct)	**=nungkurr*
3aug Object (Indirect ? and Direct)	**=wurr*

The derivation of the Matngele Object enclitic paradigm from this proposed proto-paradigm is straightforward. As already discussed, the distinction in the 3min has developed from a dative vs non-dative distinction into a human vs non-human distinction. In a structurally parallel development, the two specifically Indirect Object enclitics **=akku(-rnung)* and **=rnay* have extended their range to replace the corresponding Direct Object enclitics.

The derivation of the Kamu Object enclitic paradigms, by contrast, is not straightforward. The Direct vs Indirect Object distinction would have to be extended to all categories. In the case of the 2min apparently by borrowing a Malak-Malak form as an Indirect Object enclitic, and in the case of the Augmented categories by innovating a set of Direct Object enclitics related to the Indirect Object enclitics by an unusual /n-rr/ consonantism.

These possibilities for the development of the Kamu Object enclitic paradigms must be weighed against considerations relating to the structure of the proposed proto-paradigm in Table 7. The issue that obviously arises in relation to this paradigm is whether and how a distinction between Direct and Indirect Objects was marked in the 2min and in the aug categories.

As a first step in considering this issue, it is necessary to examine the synchronic structuring of Object enclitic paradigms in Australian languages, and the structuring of bound pronominal paradigms more generally. Some of the relevant patterns have already been discussed. If a language has both pronominal affixes and pronominal clitics cross-referencing Object functions, then the clitics will cross-reference Indirect Object functions and the affixes will cross-reference Direct Object functions. This is subject to the proviso that there are complete paradigms for both the affixes and the clitics. It is not uncommon for affixal paradigms to neutralise categories, or develop gaps. In this situation the clitics may cross-reference Direct Objects in these neutralised or gapped categories. This occurs in Kungarakany, the north-western neighbour of Kamu (Evans 1989). It is also incipient in Mayali (Evans pers. comm.).

A second important tendency is for Indirect Object enclitics to extend their range to marking Objects generally, thereby displacing previous cross-reference of Direct Objects, whether affixal or clitic marking (Evans 1989). Cross-cutting this tendency is the pressure for the maintenance of a distinction in marking between Direct and Indirect Objects. The combination of these two tendencies means that the distinction between Direct and Indirect Object cross-reference is likely to be continually eroded and re-created.

A different factor, also of considerable importance, is the distinction between minimal/singular number and augmented/plural number. If there is a number-based difference in the set of distinctions shown by a paradigm of pronominals, then it is predicted on general grounds that the minimal/singular category will show a greater set of distinctions than the augmented/plural number. This is not synchronically exemplified in any Australian language, but there are examples of number-based asymmetries in bound pronominal paradigms. Darkinyung and Awabakal have bound pronominals in the singular only (Dixon 1980:364). Kungarakany has Object enclitics, but only in the Minimal category. The Kungarakany Object enclitics, together with the corresponding free pronouns are set out in Table 8.

Table 8: Kungarakany Object enclitics and free pronouns

	Free Pronoun	Object Enclitic
1min	*ngirr-ka ~ ngirr-pa*	*=ngarrung ~ =arrong*
1+2min	*ngama-pa*	*=ngayong*
2min	*nginya-pa*	*=kingung*
3min	*kiny-pa-pa*	*=kini*

The Object enclitics function chiefly as Indirect Object enclitics, but they do have a limited function as Direct Object enclitics (Evans 1989). Patjtjamalh (Bachamal) has a complete paradigm of Indirect Object enclitics. However, the relationship between the Indirect Object enclitics and the free pronouns differs between the singular and plural numbers (Ford 1990:96).

Table 9: Patjtjamalh free pronouns

	Minimal	Unit Augmented	Augmented
1	*ngace*	*ngarra*	*ngarrara*
1+2	*ngangka*	*ngarra*	*ngarra*
2	*kane*	*nawarra*	*nawarra*
3m	*camuyic*	*pörra*	*parrmuyic*
3f	*cenymiyic*		

Table 10: Patjtjamalh Indirect Object enclitics

	Minimal	Unit Augmented	Augmented
1	*=ngarrkka*	*=ngarrang*	*=ngarrarang*
1+2	*=ngangkung*	*=ngarrang*	*=ngarrang*
2	*=wing*	*=nawarrang*	*=nawarrang*
3m	*=nöng*	*=pörrang*	*=pörrang*
3f	*=ngacang*		

A comparison of Tables 9 and 10 shows that within the singular category (not including the 1+2 combination), the free pronouns and Indirect Object enclitics are unrelated. Within the non-singular category (including the 1+2 combination), the Indirect Object enclitics consist of the corresponding free pronoun and a suffix *-(u)ng*. This suffix is most probably a reduced form of the Dative case marker *-nöng*, which as elsewhere functions as the 3min Indirect Object enclitic. The one exception is in the 3aug category where the 3UA form appears instead of a form corresponding to the 3aug free pronoun *parrmuyic*.

Given these various number-based asymmetries, it is therefore possible that in Proto Eastern Daly, the minimal number distinguished Direct from Indirect Object enclitics, whereas the augmented number had only one paradigm of Object enclitics. However, this would imply that there was a distinction between Direct and Indirect Object enclitics for the 2min. In this case, the obvious candidate would appear to be the Kamu 2min Indirect Object *=rnun* as a Proto Eastern Daly enclitic with the same meaning.

Table 11: Reconstructed Object enclitic paradigm, including 2min Direct/Indirect contrast

1min Direct Object	**=ngu*
1min Indirect Object	**=akku*
1+2min Direct Object	**=ngam*
1+2min Indirect Object	**=rnay*
2min Direct Object	**=ninyci*
2min Indirect Object	**=rnun*
3min Dative Object	**=rnung*
3min Non-dative Object	**=Ø*
1aug Object (Indirect ? and Direct)	**=warr*
1+2aug Object (Indirect ? and Direct)	**=arrarr*
2aug Object (Indirect ? and Direct)	**=nungkurr*
3aug Object (Indirect ? and Direct)	**=wurr*

However, under this reconstruction, the development of Matngele is problematic. In the 2min, the Direct Object enclitic would have extended its range to replace the Indirect Object enclitic. This pattern of development is the reverse of that found with the 1 and 1+2min, and contrary to general patterns of development.

The distinctive patterning of the 2min category suggests that person-based considerations need to be brought in to play. It is well known that address and second person reference, especially minimal address and reference, is a complicated and to some degree problematic issue in Aboriginal society. Indeed, this is probably true to varying degrees of all cultures. There is often more than one register for such address and reference. If forms from one register extend their range, then it is the forms from the more respectful/formal register that replace forms from the more familiar register. Respect is commonly indicated by obliqueness or indirectness. We have seen that the free pronoun *nungkurr*, which was historically a 2aug pronoun, has extended its range to include the 2min in Kamu, presumably via the well-known register-based replacement process.

I would suggest that a similar, and perhaps not unrelated, process has occurred with the Object enclitics. I propose that **=ninyci* was originally the 2min Indirect Object enclitic, and

that some other form, lacking reflexes, was the 2min Direct Object enclitic. The proposed paradigm for Proto Eastern Daly is set out in Table 12.

Table 12: Final reconstructed Object enclitic paradigm

1min Direct Object	**=ngu*
1min Indirect Object	**=akku*
1+2min Direct Object	**=ngam*
1+2min Indirect Object	**=rnay*
2min Direct Object	(unknown form)
2min Indirect Object	**=ninyci*
3min Dative Object	**=rnung*
3min Non-dative Object	**=Ø*
1aug Object (Indirect ? and Direct)	**=warr*
1+2aug Object (Indirect ? and Direct)	**=arrarr*
2aug Object (Indirect ? and Direct)	**=nungkurr*
3aug Object (Indirect ? and Direct)	**=wurr*

In Matngele, **=ninyci* has replaced the original Direct Object enclitic, as did the Indirect Object enclitics in the 1 and 1+2min. The course of development in Kamu is summarised in Table 13.

Table 13: Semantic change in the development of Kamu 2min Object enclitics

	2min DO Fam	2min DO Respect	2min IO
pED	Form X	Form X	**=ninyci*
Pre-Kamu Stage 1	Form X	**=ninyci*	**=ninyci*
Pre-Kamu Stage 2	**=ninyci*	**=ninyci*	**=ninyci*
Kamu	*=niny*	*=niny*	*=rnun*

The original Indirect Object enclitic **=ninyci* became a respect register form for Direct Objects, and then the sole Object form. This course of development parallels that of the pronoun *nungkurr* in Kamu. It also parallels the synchronic situation in Kungarakany. Kungarakany generally has prefixal cross-reference for Direct Objects. However, there is no prefixal cross-reference for combinations of third person acting on 2min. In this combination, the enclitic *=kingung* must be used to cross-reference the 2min Direct Object (Evans 1989). However, as Kamu otherwise maintains a distinction between Direct and Indirect Object enclitics, a new Indirect Object enclitic *=rnun* was borrowed from Malak-Malak, to re-establish the Direct vs Indirect Object distinction for the 2min.

This then leaves the question of whether the augmented category distinguished Direct from Indirect Objects. There are two possibilities. One is that Proto Eastern Daly was like Kamu and distinguished the two. Under this hypothesis, Kamu maintained the distinction, and presumably the forms. Matngele, on the other hand, extended the Indirect Object forms to cover all Object function, as it did in the minimal. The proto-paradigms reconstructable under this hypothesis are set out in Table 14.

Table 14: Hypothesis #1

	DO	IO
1min	*=*ngu*	*=*akku(-rnung)*
1+2min	*=*ngam*	*=*rnay*
2min	Unknown form	*=*ninyci*
3min	*=Ø (Non-dative)	*=*rnung* (Dative)
1aug	*=*wan*	*=*warr*
1+2aug	*=*anan*	*=*arrarr*
2aug	*=*nungkun*	*=*nungkurr*
3aug	*=*wun*	*=*wurr*

The other alternative is that there was only a single set of Object enclitics in the augmented, and that these descend as Indirect Object enclitics in Kamu, with the Kamu Direct Object enclitics being innovations. The proto-paradigms under this hypothesis are set out in Table 15.

Table 15: Hypothesis #2

	DO	IO
1min	*=*ngu*	*=*akku*(-*rnung*)
1+2min	*=*ngam*	*=*rnay*
2min	(unknown form)	*=*ninyci*
	Non-Dative	Dative
3min	*=Ø	*=*rnung*
	Object	
1aug	*=*war*	
1+2aug	*=*arrarr*	
2aug	*=*nungkurr*	
3aug	*=*wurr*	

The first hypothesis is to be preferred as the innovation of a set of Direct Object enclitics is an unusual development. However, there are other factors which suggest that this hypothesis cannot be dismissed simply because it is unusual. Firstly, the two augmented Object enclitic paradigms in Kamu are morphologically related by an /n-rr/ consonantism, which is in itself highly unusual. Secondly, the most immediate relation between free and bound pronominals is the identity between the 2aug pronoun and Indirect Object enclitic, both of which are *nungkurr*. Given that **nungkurr* is an old form, this suggests that the 2aug Direct Object enclitic *nungkun* is based on *nungkurr* and not the reverse. By extension, this would suggest that the other Kamu Direct Object enclitic forms are based on the corresponding Indirect forms and not vice versa.

This direction of morphological relationship appears to receive further support from the fact that a plausible source, in semantic terms, can be provided for the /n/ found in the Kamu augmented Direct Object enclitics. A Direct Object prefix, which may be reconstructed as **n*, is found in the noun class and pronominal prefix paradigms of many northern languages

(Heath 1987). Kungarakany and Warray, the northern neighbours of Kamu, are among the languages showing reflexes of this prefix in their pronominal prefix paradigms. However while this Direct Object prefix seems a promising source for the /n/ found in the Kamu Direct Object paradigm, there is a lack of any plausible mechanism by which the two may be related.

As we have seen the Object enclitics, when relatable to some other forms, relate either to free pronouns or to dative case markers. No northern language has a paradigm of free Direct Object pronouns involving an /n/ affix. Indeed northern languages generally lack a distinctive paradigm of Direct Object pronouns altogether. This is true of Kamu and all its neighbours. There is no motivation for reconstructing such a paradigm for Proto Eastern Daly.

The other alternative would be that Kamu had calqued the /n/ Direct Object enclitics on the /n/ Direct Object prefix constructions of its northern neighbours, Kungarakany and Warray. This hypothesis entirely lacks plausibility with Warray. Kamu and Warray do not otherwise show any diffusional commonalities. The **n-* prefix is only segmentable in Warray at a very abstract level, as a comparison of the Warray Subject and Object prefix paradigms in Table 16 shows.

Table 16: Warray Subject and Object prefixes

Subject	Minimal	Augmented
1	*at-*	*i-*
1+2	*ma-*	*i-*
2	*an-*	*a-*
3	*Ø-*	*pa-*

Object	Singular	Plural
1	*pan-*	*in-*
2	*ana-*	*in-*
3	*Ø-*	*pun-* ~ *pin-*

The calquing hypothesis is slightly less implausible with Kungarakany. Kungarakany and Kamu show one old similarity. Kungarakany has a prefix *ki-*, which is found on adjectives and part nouns. Many adjectives in Kamu and in Matngele, including a number of reconstructable forms, have a now completely lexicalised initial syllable *ki-* ~ *ku-* ~ *kun-* which is probably historically related to the Kungarakany prefix. The **n-* in the Kungarakany prefix paradigms is somewhat more obviously segmentable than in Warray.

Table 17: Kungarakany Subject and Object prefixes

Subject	Non-Future	Future
1minS	*arr-*	*arrV-*
1+2minS	*ma-*	*ma-*
2minS	*ngi-*	*ngi-*
3minS	*Ø-*	*ka-*
1augS	*ngi-rr-*	*ngi-rrV-*
1+2augS	*ku-rr-*	*ku-rrV-*
2augS	*ni-rr-*	*ni-rrV-*
3augS	*pi-rr-*	*pi-rrV-*

Object	Minimal	Augmented
1	*kan-*	*ngi-rri-n-*
1+2	*ma-n-*	*ku-rru-n-* ~ *ku-n-*
2		*ni-rri-n-*
3	*Ø-*	*pu-rru-n-* ~ *pu-n-*

However, the hypothesis still remains implausible with Kungarakany. The two languages do not evidence any significant degree of diffusion. The factoring out of the /n/ from the Kungarakany paradigms would still be an exercise with a considerable degree of abstractness. Consequently, the apparent relationship of the /n/ in the Kamu augmented Direct Object paradigms with the **n-* found extensively in prefixal paradigms must be viewed as unproven, and possibly simply the result of chance.

Nonetheless, it still remains the case that the augmented Direct Object paradigm appears to be based on the Indirect Object paradigm, and not the converse. As such, the augmented Direct Object enclitics appear to be an innovation, either in Kamu or alternatively in some later stage of Proto Eastern Daly. Therefore, while the proto-paradigms in Table 14 are the preferred reconstruction, the reconstruction in Table 15 cannot be rejected.

A related issue, which arises whatever the reconstruction or sequence of reconstructions is chosen, is a consideration of the types of relationships between free pronouns and Object enclitics. We have seen that the 2aug free pronoun is identical to the Kamu Indirect Object enclitic and the Matngele Object enclitic. The other relationship is between free pronouns and Kamu Direct Object enclitics.

(18)

	Pronoun	Kamu DO
1min	*nguru*	*=ngu*
1+2min	*ngemu*	*=ngam*

We have seen that the Eastern Daly languages descend ultimately from a language with transitive prefixing for Direct Objects, and that the Object enclitics most probably descend ultimately from free pronouns encliticised as cross-reference for Dative/Indirect Objects. The appearance of *=ngu* and *=ngam* as Direct Object enclitics in Proto Eastern Daly, therefore, presumably arises through the sequence set out in (19).

(19) *Presumed development of Object enclitics*
Pronoun encliticised as cross-reference for Indirect Object
> Enclitic for Objects generally
> Direct Object enclitic with new Indirect Object enclitics.

This sequence may be extended to the 2min category, and is illustrated for the non-third person minimal categories in Table 18.

Table 18: Illustration of development for 1 and 2 person Object forms

		Pronoun	DO cross-ref	IO cross-ref
pED – Stage 1	1min	**nguru*	Prefix	**=ngu*
	1+2min	**ngemu*	Prefix	**=ngam*
	2min	**X*	Prefix	**=Y*
pED – Stage 2	1min	**nguru*	**=ngu*	**=ngu*
	1+2min	**ngemu*	**=ngam*	**=ngam*
	2min	**X*	**=Y*	**=Y*
pED – Stage 3	1min	**nguru*	**=ngu*	**=akku(-rnung)*
	1+2min	**ngemu*	**=ngam*	**=rnay*
	2min	**X*	**=Y*	**=ninyci*

However, there are problems in extending this sequence to the 3min. The equivalent sequence for the 3min is illustrated in Table 19.

Table 18: Equivalent, problematic development of the 3min Object form

	Pronoun	DO cross-ref	IO cross-ref
Stage 1	**kurna*	Prefix	**=Ø*
Stage 2	**kurna*	**=Ø*	**=Ø*
Stage 3	**kurna*	**=Ø*	**=rnung*

It is most unlikely that 3min Indirect Objects were originally cross-referenced by a null enclitic. No enclitic system in Australia has a null enclitic for 3min Dative/Indirect Objects. Languages which do not have base pronouns for the third person, have substantive 3min pronouns in dative/possessive paradigms, as exemplified by the Wardaman paradigms in Table 3.

There are two possibilities as to the original, substantive, 3min Indirect Object enclitic. One is that **=rnung* is the original form. Alternatively, some other form, lacking synchronic reflexes, was the original form. It seems unlikely that **=rnung* was the original form. If it was the original form, then the prediction is that it would have become the marker for human Objects generally, when the other minimal Indirect Object enclitics extended their ranges to become general Object enclitics.

Table 19: Hypothesis: original 3min IO was *=rnung*

	Pronoun	DO cross-ref	IO cross-ref
Stage 1	**kurna*	Prefix	**=rnung*
Stage 2	**kurna*	**=rnung* (human)	**=rnung*
Stage 3	**kurna*	**=rnung* (human)	**=rnung*

We have seen that the 3min category patterns differently from the other categories, when there is a distinction in Object enclitic paradigms. Consequently, it is possible that **=rnung* would have continued to cross-reference Indirect Objects, when new Indirect Object enclitic forms were innovated elsewhere in the minimal category.

If some other form was the original 3min Indirect Object enclitic, then the predicted course of development for the 3min in Proto Eastern Daly is set out in Table 20.

Table 20: Hypothesis: original 3min IO was some other form, *=X*

	Pronoun	DO cross-ref	IO cross-ref
Stage 1	**kurna*	Prefix	**=X*
Stage 2	**kurna*	**=X* (human)	**=X*
Stage 3	**kurna*	**=X* (human)	**=rnung*

This is not the reconstruction for the 3min in the stage of Proto Eastern Daly immediately preceding its break-up. This stage has **=Ø* as its 3min Direct Object enclitic (Tables 14 and 15). In considering the marking of 3min Direct Objects, the universal preference for cross-

referencing 3min Subjects and Direct Objects with null morphemes is of importance. Given this preference it appears plausible that an enclitic cross-referencing only human Direct Objects could be displaced by null cross-reference. As such, there would be a fourth stage to the sequence:

	Pronoun	DO cross-ref	IO cross-ref
Stage 4	**kurna*	**=Ø*	**=rnung*

The complex relations between free and enclitic pronominals, and the very different paths taken by the Object enclitic paradigms in Kamu and Matngele argue that these paradigms are rather unstable diachronically. This instability derives from the interaction of the factors listed in (20).

(20) *Factors behind the diachronic instability of the Object enclitic paradigms*

A. The tendency for Object enclitics to expand from their minimal range of cross-referencing Indirect/Dative Objects to become general Object markers. This expansion in functional range means that the core vs peripheral opposition is no longer coded.

B. A countervailing tendency to create new ways of coding the core vs peripheral opposition.

C. The role of the Minimal category as the unmarked category.

D. Respect registers, and their effects on the second person categories, particularly the 2min category.

E. The preference for null cross-referencing of 3min Direct Objects.

The factors in (20) have all played a role in the evolution of the Object enclitic paradigms of Kamu and Matngele. They also appear to be of relevance to the evolution of Object enclitic systems in the other languages of the region: Kungarakany, Guwema, Kenjdjerramal, MalakMalak, and Patjtjamalh. Comparison of the Kamu and Matngele systems with each other, and among the languages of the area, shows that there is no single determinate pattern of interaction between these three factors. Rather there are many possible patterns of interaction which could produce a variety of outcomes.

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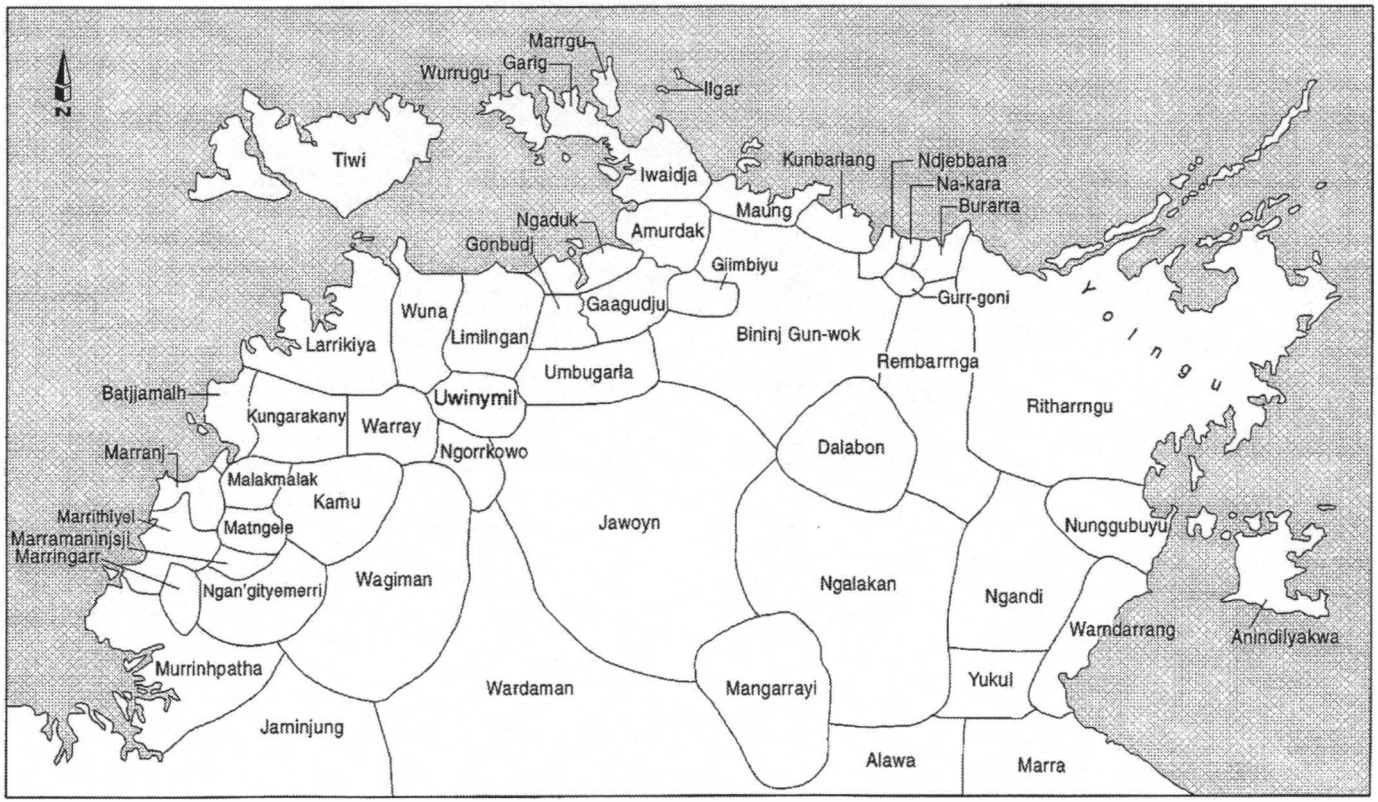
IV. Arnhem Land



Map 3: Languages of the Top End

Harvey, M. "The evolution of object enclitic paradigms in the Eastern Daly language family". In Evans, N. editor, *The Non-Pama-Nyungan languages of northern Australia: Comparative studies of the continents most linguistically complex region*.
PL-552:185-201. Pacific Linguistics, The Australian National University, 2003. DOI:*10.15144/PL-552.185*

8 *An initial reconstruction of Proto Gunwinyguan phonology*

MARK HARVEY

1 Introduction

This paper aims to set out a number of the principal issues in the reconstruction of Proto Gunwinyguan phonology, and to suggest some possible resolutions for questions that arise. The database for the ensuing discussion consisted of the following dictionaries (the number provides a rough estimate of the number of roots listed, with non-Gunwinyguan languages in brackets):

> Bininj Gun-wok 5000, Dalabon 1000, (Kungarakany 500), Jawoyn 2000, (Kamu 800), (Jaminjung 2000), Mangarrayi 2000, (Matngele 800), Ngalakgan 1100, Ngandi 1300, Nunggubuyu 5000, (Wagiman 1500, Wardaman 2000, Warndarrang 800), Warray 1100.

Obviously the considerable variation in the size and quality of these dictionaries, and the variations in quantity and quality limit the comprehensiveness of coverage. Despite these limitations, it was possible to assemble a reasonably large number of sets of suggestively similar forms across the various languages. These sets are listed in the Appendix.

There are a number of points to be noted about this database assembled from the dictionaries listed above. Firstly it is helpful to set out the phonemic inventories of the Gunwinyguan languages and their neighbours. The maximal inventory, in a standardised practical orthography, is set out in Tables 1a and 1b.[1]

[1] Most descriptions of the segmental inventories of Gunwinyguan languages list two series of stops, most commonly termed fortis and lenis. I do not list two series of stops, because I analyse the fortis stops as geminates. Consequently, they are members of the class of consonant clusters, and not part of the segmental inventory of any of the languages.

Nicholas Evans, ed. *The non-Pama-Nyungan languages of northern Australia: comparative studies of the continent's most linguistically complex region*, 205–268.
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Harvey, M. "An initial reconstruction of Proto Gunwinyguan phonology". In Evans, N. editor, *The Non-Pama-Nyungan languages of northern Australia: Comparative studies of the continents most linguistically complex region.*
PL-552-205-268. Pacific Linguistics, The Australian National University, 2003. DOI:*10.15144/PL-552.205*

Table 1a: Maximal phonemic inventory — consonants

	Labial	Alveolar	Retroflex	Dental	Palatal	Velar	Glottal
Stop	*p*	*t*	*rt*	*th*	*c*	*k*	*q*
Nasal	*m*	*n*	*rn*	*nh*	*ny*	*ng*	
Lateral		*l*	*rl*	*lh*	*ly*		
Tap/trill		*rr*					
Approximant	*w*		*r*		*y*		

Table 1b: Maximal phonemic inventory — vowels

	Front [–round]	Front [+round]	Central	Back
High	*i*			*u*
Mid	*e*	*œ*	*v*	*o*
Low			*a*	

The language-specific variations from this maximal inventory are:

(a) The Dentals are found only in Ngandi, Nunggubuyu, and the Yolngu languages.

(b) There is no glottal stop in Matngele, Nunggubuyu, Wardaman, or Warndarrang.

(c) Nunggubuyu and the Yolngu languages have only the three cardinal vowels.

(d) The /v/ vowel occurs only in Dalabon and Rembarrnga. In Dalabon, it is a high central vowel. In Rembarrnga, it appears to be a schwa.

(e) The palatal lateral /ly/ is found only in Wardaman, Kamu and Matngele.

(f) The front rounded vowel /oe/ occurs only in Kamu and Matngele. These two languages also lack /o/.

Apart from phonological patterns, it is also useful to consider the part-of-speech categorisations that characterise the Gunwinyguan languages and their neighbours. Among these languages, there is a primary division of roots into four main part-of-speech classes: verbs, coverbs, nominals, and particles. These four part-of-speech classes show the following characteristics.

VERBS. Verb roots combine with suffixes to form complex paradigms which convey information as to tense, mood, and aspect. These paradigms frequently show a high degree of surface morphological opacity. Verbs most commonly appear in compounds with coverbs, as the second member of the compound. In this compounding function, verbs do not normally convey any lexical information, but rather convey information as to tense, mood, and aspect only. Most verbs can however, function independently, and when they do so, they have a lexical meaning. The class of verb roots is closed.

COVERBS. Coverb roots convey nearly all the 'lexical' verbal meanings. Coverbs do not however inflect for tense or mood, and thus they are distinguished from verbs. Coverbs are distinguished from nominals by the fact that they cannot, by themselves, be predicational in introductory indicative text. They must be combined with a verb, in order to construct a

predicate in this context. The formal status of the combinations of coverbs and verbs varies considerably. Most commonly the two appear in a coverb+verb compound. However, there are also constructions where the two appear as independent words. The class of coverb roots is open.

NOMINALS. The class of nominal roots is a default class. It includes all roots which are predicational, but neither verb nor coverb roots. Nominals are specifically distinguished from coverbs by the fact that they may, by themselves, be predicational in introductory indicative text. The class of nominal roots is open.

PARTICLES. The class of particles includes all non-predicational morphemes.

This paper is primarily concerned with material from the two open classes: nominals and coverbs. Though coverbs are most commonly compounded with verbs, I consider coverbs independently of the compound structure. This is chiefly because the verbs appearing in compounds with a particular coverb are generally not cognate among the various Gunwinyguan languages. There are a few cases where the whole coverb+verb compound shows cognacy. In these cases, I include the verb in the reconstruction. Verb roots and their complex paradigms are examined in Alpher, Evans and Harvey (this volume). Material from the verb paradigms will however be used where it is required in this paper.

With each set of correspondences, I provide a reconstructed proto-form. However, I do not thereby wish to suggest that all of these sets consist of cognate reflexes descended from proto-forms assignable to a particular ancestral proto-language. Borrowing is obviously a factor among the Gunwinyguan languages, as it is universally. Heath (1978a:29–32) discusses extensive borrowing, including borrowing of bound morphemes, between various of the languages of south-eastern Arnhem Land. He argues that the social structures of this area allow for borrowing, especially the norm of multilingualism, and the fact that common ownership of a particular language variety is not a basis for social action. Given that these factors appear to have characterised Australia generally, Heath (1978a:139–146) argues that borrowing is likely to be an issue of concern across Australia.

However, Heath does not argue that borrowing is equally probable across all morphological categories. He argues that verbal suffixal paradigms are particularly resistant to borrowing (1978a:146). The strongest evidence for the Gunwinyguan family comes from the system of verbal suffixal paradigms reconstructed in Alpher, Evans and Harvey (this volume). Given this, the match between the group of languages identified as Gunwinyguan by verbal commonalities, and the group of languages found in a particular correspondence set would appear to be a factor of relevance in determining the likelihood of borrowing. If there is a good correlation between the two groups, then there would not appear to be any evident motivation for analysing the correspondence set as involving extensive borrowing.

(1) **worrowk-* 'to jump': BGW *worrowkworrowk-*, D *worrowk-*, Ja *worrowk-*, Ngal *worrowk-*, Ngan *worrok-*, R *worrowk-*

(2) **war-pu-* 'to sing (tr)': BGW *wa-pu-*, Ja *war-wu-*, Ngal *war-pu-*, Ngan *war-pu-*, R *war-pu-* (Ritharrngu *war-pu-*)

Correspondence set (2) shows borrowing into Ritharrngu. However, there is no reason to propose that its widespread distribution across the Gunwinyguan languages reflects widespread borrowing. Most of the correspondence sets in the Appendix have a comparatively limited geographical range. There are only a small number of widespread

correspondence sets. Consequently, there is no evidence that widespread, serial borrowing has been an extensive phenomenon.

If a correspondence set does not show a close correlation with the group of languages identified as Gunwinyguan by verbal suffixing commonalities, then there are two immediate hypotheses. One is that the correspondence set reflects borrowing. The other is that the distribution of the correspondence set reflects inheritance from a more ancient proto-form, ancestral to pGN. In the case of borrowing, a contiguous geographical distribution is predicted. In the case of inheritance from a more ancient proto-form, geographical discontinuities are highly likely, though not required.

Geographical continuity is another factor of general relevance in considering the probabilities of borrowing. Geographical discontinuities are most unlikely to be explicable in terms of borrowing. There are a number of correspondence sets for body-part nominals, some discontinuous, whose distribution does reflect inheritance from a more ancient proto-form, as they have reflexes among the Pama-Nyungan languages.

(3) **-thala* 'mouth': D *talv*, Ngal *-cala*, R *tala*, W *-cili* (Warumungu *cala*), ?Ngan *-thaa*, ?Nu *lha-*, (?Ritharrngu *thaa*)

Apart from **-thala* 'mouth', this set of body-part nominals also includes **cakku* 'left hand', **tharr* 'thigh', and **thiw* 'liver'.

There are, however, other widespread but contiguous correspondence sets whose distribution does appear to reflect borrowing, and not inheritance from a more ancient proto-form. For nominals, at least, these correspondence sets are concentrated in certain cultural/semantic domains. The names of ceremonies are a paradigm example. The ceremony name *mardayin*, for example, is found in virtually every language of Arnhem Land. Terms for ceremonial participants and ceremonial objects also show distributions, which do not correlate with the Gunwinyguan family, as determined by verbal inflections.

(4) **mululuk* 'initiand': Ja *mululuk*, M *mululuk* 'young child', W *mululuk* (Kamu *mululuk*, Wagiman *mululuk*, Wardaman *mululuk*)

(5) **karlampa* 'headband': BGW *karlampa*, Ja *karlampa*, W *karlampa(ng)* (Gaagudju *karlampa*, Kamu *karlampang*, Kungarakany *karlampa*, Jaminjung *karlampang*, Larrakia *karlampa*, Matngele *karampang*, Wardaman *karlampang*)

The names of some non-ceremonial material objects also show a lack of correlation.

(6) **cimirnrti* 'knife': BGW *ciminti*, Ja *cimirnrti*, Ngan *cimirnrtiq* 'spike of dugong spear', Nu *cimirnrti* 'spike of dugong spear', R *cimirnrtiq* 'spike of fish spear', (Jaminjung *cimirnrti* 'knife', Ritharrngu *cimirnrtiq* 'spike of dugong spear', Wagiman *cimirnrtirr* 'knife', Wardaman *cimirnrti* 'knife', Warndarrang *cimirnrti* 'spike of dugong spear')

(7) **karlarr* 'dilly bag': M *karlarr*, W *karle* (Kamu *karlarr*, Jaminjung *karlarr* 'large fishing net', Matngele *kararr*, Wagiman *karlarr*, Wardaman *karlarr*)

There are a number of cases where the names of natural species also fail to show a correlation.

(8) **calarr* 'centipede': BGW *calarr*, Ja *calarr*, W *cale* (Kungarakany *celerr*, Kamu *cererr*, Jaminjung *calarrin*, Matngele *cererr*, Nungali *-yalarru*, Wagiman *telerrin*, Wardaman *calarrin*)

(9) **cirrpiyuk* 'whistleduck': BGW *currpiyuk*, Ja *cirrwiyuk*, M *cirrpiyuk*, Ngan *cirripiyuk*, W *cirrpiyuk* (Kungarakany *cirrpiyuk*, Marra *cirrpiyu*, Ritharrngu, Warndarrang *cirrpiyuk*)

(10) **karnrtalppurru* 'female kangaroo': BGW *karnrtalppurru*, Ja *karnrtalppurru*, Ngal *karnrtalppurru*, Ngan *karnrtalppurru*, Nu *arnrtaalpurru*, R *karnrtalppurru* (Ritharrngu *karnrtalppurru*, Marra *karnrtalpurru*, Wardaman *karnrtalwu*, Warndarrang *karnrtalpurru*)

Some names for categories of the landscape also fail to show a correlation.

(11) **parlpparl* 'flat (ground)': Ja *perlpperlmi*, M *perlperl*, W *parlpparl* 'flat hard rock' (Matngele *parlparl*, Ngaliwurru *parlparlma*, Wagiman *perlperl-in*, Wardaman *parlparlpan ~ perlperlin*)

On the other hand, there are no examples, where correspondence sets for 'adjectival' nominals fail to show a correlation.

(12) **-parang* 'cheeky': BGW *-pang*, D *parng*, Ja *-parang*, Ngan *-parng* 'bitter, sour', R *parng* 'bitter, salty', Uw *-poreng*, W *-pulang*

(13) **colang* 'ripe, cooked': BGW *corleng*, Ja *colang*, M *curlak*, Nu *lharang*, W *colong*

(14) **-mak* 'good': Ja *-mak*, May *-mak*, Ngal *-maq*, Ngan *-maak*, R *-maq*, Uw *-mok*, W *-muk* (Kungarakany *-mek*)

Correspondence sets for body-part nominals generally show a clear correlation.

(15) **kurlak* 'skin': BGW *-kurlaq*, D *kulaq*, Ngal *-kurlaq*, Ngan *kurlaq*, Nu *makurlak*, *warrikurlak* 'bark' R *kurlaq* (Ritharrngu kurlaq)

(16) **kurrac* 'blood': BGW *-kurrac* (avoidance term), D *kurrac*, Ja *-kurrac*, M *kurracnyin*, Ngal *kurrac*, W *kurrac*

(17) **-peremelk* 'shoulder blade': BGW *perimelq* 'kangaroo shoulder blade', Ja *-peremelk*, Ngal *peremelk*, Ngan *peremelk*, Nu *wirimil*, W *-pimek*

The few cases where correspondence sets for body-part nominals do not show a clear correlation, appear to involve inheritance from a more ancient proto-form, as previously discussed.

This explanation, of inheritance from a more ancient proto-form, has much less force with the correspondence sets in (4)–(11). All of these are contiguous correspondence sets, and none have reflexes among the Pama-Nyungan languages. It also seems likely that an examination of the semantic domains characterising coverbs might also be fruitful in indicating the most likely areas of borrowing. However, this is a much more complex exercise, and I do not examine this issue here.

Therefore, in terms of an initial overview, the evidence for borrowing appears to be comparatively limited across the Gunwinyguan family. Borrowing appears to be most probable in certain nominal domains. The mere fact that a nominal belongs to the domains of ceremonies and related matters, material objects, or natural species does not prove that it is a loan. There are some material object, and natural species names, which show a strong correlation with the group of languages identified as Gunwinyguan by verbal commonalities.

(18) **pornrtok* 'woomera': BGW *pornrtok*, D *pornrtok*, Ngal *pornrtok*, Ngan *pornrtok*, Nu *warnrtak*, R *pornrtok* (Kungarakany *pornrtok*, Ritharrngu *parnrtak*)

(19) **yawok* 'yam sp.': BGW *yawok*, Ja *yawk*, D *yawok*, Ngal *yawok*, W *yawuk*

It seems most likely that these are pGN forms. However, care must be taken with terms from these domains. As a hypothetical example, there might be a number of correspondence sets which appeared to establish a lamino-dental lateral **lh*, as a distinctive segment. If the great majority of these correspondence sets were in the domains of ceremonies and related matters, material objects, or natural species, and the correspondence sets did not generally show a good correlation with Gunwinyguan, as defined by verbal commonalities, then the correspondence set would be less secure as a reflection of a reconstructable phoneme and an explanation in terms of borrowing would seem plausible.

With these cautions noted, my procedure in this paper has been inclusive, because of the difficulty of verifying loan status, and my list of preliminary 'cognates' in the Appendix does not in general distinguish words whose limited occurrence or areal properties suggest they are either loans or local innovations. This is because

(a) not all the evidence is in yet, and a word just in one language or a small area may yet turn out to be archaic, descending from pG, if non-Gunwinyguan cognates are eventually found.

(b) the same logic goes for reconstructed forms attested only in a likely subgroup (e.g. Warray-Jawoyn, or Ngalakgan-Rembarrnga); they are simply starred and the task of determining the level of the reconstruction is left for subsequent investigation.

(c) however, I note forms that are aberrant in their correspondences, to aid future investigators in identifying and accounting for them.

2 The Proto Gunwinyguan phonemic inventory

On the basis of the correspondence sets in the Appendix, I reconstruct the phonemic inventory for pGN as set out in Tables 2a and 2b. The majority of these proto-phonemes are uncontroversial as the languages show great consistency in their reflexes. Only those areas which are reasonably open to debate are examined further in this paper.

Table 2a: Reconstructed pGN phonemic inventory — consonants

	Labial	Alveolar	Retroflex	Laminal	Palatal	Velar	Glottal
Lenis Stop	*b*	*d*	*rt*	*th*	*j*	*g*	*q*
Nasal	*m*	*n*	*rn*		*ny*	*ng*	
Lateral		*l*	*rl*				
Tap/Trill		*rr*					
Approximant	*w*		*r*		*y*		

Table 2b: Reconstructed pGN phonemic inventory — vowels

	Front	Central	Back
High	*i*		*u*
Mid	*e*		*o*
Low		*a*	

3 Specific phonological contrasts

3.1 The geminate–singleton (fortis–lenis) contrast

All the Gunwinyguan languages, save Mangarrayi and Nunggubuyu, show an apparent contrast between two series of stops. The exact synchronic nature in phonological terms of the fortis–lenis contrast is the subject of some debate (Butcher n.d.; Jaeger 1983; McKay 1975, 1980; Merlan 1983:2–6; Baker 1999). While, there is debate as to the nature of the opposition phonologically, there is general agreement on the principal phonetic parameters of the contrast. All analysts are agreed that for the Gunwinyguan languages at least, the contrast is not a laryngeal contrast. There is no correlation between the stop contrast and contrasts in voice onset timing, or creaky voice, or any other laryngeal factor.

Rather the principal perceptible phonetic parameter is a difference in length. The fortis stops are consistently and significantly longer than the lenis stops. McKay (1975:17–21) has argued that this length contrast should be interpreted phonologically as a contrast between geminate and single stops. This is the standard analysis of a length contrast. As there is no evidence requiring the adoption of any other less usual analysis, I follow McKay and treat the contrast as one of geminate vs single stops.

Diachronically, the contrast between geminate and singleton appears to be of some antiquity in pGN. Heath (1978a:37–41) states that the correspondence sets in Table 3 hold systematically between Nunggubuyu and Ngandi.

Table 3: Systematic correspondence sets for Nunggubuyu and Ngandi (Heath 1978a:37–41)

Ngandi	*p*	*rt*	*th*	*c*	*k*	*pp*	*tt*	*rtrt*	*thth*	*cc*	*kk*
Nunggubuyu	*w*	*r*	*lh*	*y*	*w*	*p*	*t*	*rt*	*th*	*c*	*k*

As Heath argues, these correspondence sets are presumably to be understood in terms of the lenition chain:

Geminate > Singleton > Approximant

It would therefore appear that the geminate vs singleton contrast should be reconstructed for the proto-language ancestral to Nunggubuyu and Ngandi. The Gunwinyguan languages generally show consistency in their correspondences involving geminates, providing that geminates belong to the class of permitted clusters in the particular Gunwinyguan language. Some widespread or discontinuous correspondence sets are listed in (20)–(24).

(20) **cakku* 'left hand': M *cakuyaku*, BGW *-cakku*, Ngal *-(pala)-cakku*, Nu *palacaku*[2] (Wagiman *-caku*)

(21) **ka(k)kak* 'parallel grandparent': BGW *kakkak* 'parallel grandparent, focally MM', D *kakkak* 'MM', Ja *kakak* 'MM', M *kakak* MM, Ngan *kokkok* 'MM', R *kakkak* 'parallel grandparent, focally MM', ?W *kakkak* 'close non-marriageable cross-cousin' (Marra *kaka*, Warndarrang *kaka*)

(22) **kappay* 'ironwood': D *kappay* 'ironwood wax', M *kapay* 'ironwood wax' BGW *kappay* 'hard, ironwood wax' (Gaagudju *kaapay* 'ironwood')

(23) **kappurla* 'blind': D *kappurla*, Ja *kappurla*, BGW *kappurla*, Ngal *kappurla*, Ngan *kappurlaq*, R *kappurla*

(24) **pokko* 'spear': D *pokko*, Ja *pokko*, BGW *pokko*, Ngan *pokkoq*, W *pukku* (Ritharrngu *pakkaq*)

There are some examples of singleton correspondences, where a geminate would be predicted, as in the Jawoyn form *kakak* 'MM'. There are also occasional correspondence sets which show considerable irregularity.

(25) **parra(k)karl* 'spear tree': D *parrakkarl* 'Bambusa arnhemicus', Ja *parrakkarl*, M *parrakarl*, BGW *parrakarl*, Ngal *parrakarlq*, Ngan *parrakkarlq*, W *parra(k)karl* (Alawa, Jaminjung, Wagiman, Wardaman *parrakarl*)

However, given the general consistency of geminate vs singleton correspondences, I reconstruct geminates as part of the consonant cluster inventory of pGN.

3.2 The alveolar–retroflex contrast

All of the Gunwinyguan languages contrast alveolar and retroflex apicals in morpheme-medial and -final positions. It appears that this contrast should be reconstructed for pGN. The best evidence for reconstruction of the contrast is provided by the two correspondence sets in (26) and (27).

(26) **-kanam* 'ear': BGW *-kanem*, D *kanvm*, Ngal *-kanam*, Ngan *-kanam*, R *kanam*, W *-kanim* (Warndarrang *wanam*)

(27) **-marnak* ' arm': Ja *-marnak* 'arm', R *marnak* ' arm', W *-murnak* 'shoulder'

The correspondence set for **kanam* 'ear' is both widespread and discontinuous. The Warray correspondent *-ganim* is isolated, as the intervening languages lack correspondents. The second correspondence set for **marnak* 'upper arm' is similarly discontinuous, with the languages intervening between Jawoyn and Rembarrnga lacking correspondents. These two correspondence sets would therefore appear to establish a contrast between **n* and **rn* in pGN.

There is also evidence for a contrast with the laterals. As with the nasals, the discontinuous correspondence sets in (30) and (32) provide the strongest evidence for reconstruction of the contrast.

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[2] The Nunggubuyu form *palacaku* is most probably a borrowing as it fails to show lenition of the intervocalic /c/, which should have lenited to /y/ (Heath 1978a:38).

(28) **-thala* 'mouth': D *talv*, Ngal *-cala*, R *tala*, W *-cili* (Warumungu cala), ?Ngan *-thaa*, ?Nu *lha-* (?Ritharrngu *thaa*)

(29) **walam* 'south': BGW *walam* 'west', D *walvm*, Ja *walam*, Ngal *walam*, R *walam*, W *wala/em*

(30) **parlan-* 'nearly': D *parlan-*, W *parlan-*

(31) **yarlarr-* 'to disperse': BGW *yarlarr-*, D *yarlarr-*, Ja *yarlarr-*, Ngal *yarlarr-*, Ngan *yarlarr-*

(32) **wulkan* 'sibling': D *wulkun* 'younger sibling', W *-wulkan*

(33) **kurlak* 'skin': BGW *-kurlaq*, D *kulaq*, Ngal *-kurlaq*, Ngan *kurlaq*, Nu *makurlak*, *warrikurlak* 'bark' R *kurlaq* (Ritharrngu *kurlaq*)

The evidence is less strong for a contrast in the stops. The distribution of the natural species names in (34) and (35) could involve borrowing.

(34) **cotet* 'nail-tailed wallaby': BGW *cotet*, D *cotet*, Ja *cotet*

(35) **kortrtol* 'owl sp.': BGW *kortrtol*, D *kortrtol*, Ja *kortrtol*, W *kortrtol*

(36) **mot-* 'to be quiet': BGW *mot-*, Ja *mot-*, Ngal *mot-*, W *mot-* (Kungarakany *mot-*)

(37) **martmart-* 'to shine': Ja *martmart-*, Ngal *martmart-*, W *martmart-*

However, the correspondence sets for the apical stops, and the nature of their distribution, are not the only factors to be considered in determining whether or not to reconstruct an alveolar vs retroflex contrast. If the contrast is well supported for nasals and laterals, then it is altogether improbable that it did not also manifest in the stops. There are no cases of stops showing fewer place of articulation contrasts than nasals among Australian languages, but there are a few cases of the reverse (Hamilton 1996:58–60).

Another factor favouring the reconstruction of an alveolar vs retroflex contrast is the impossibility of predicting the reflexes, which are generally consistent within a correspondence set. If only a single apical series was reconstructed, then there does not appear to be any way of explaining why (26), (28), and (36) consistently show alveolar reflexes, whereas (27), (31), and (37) consistently show retroflex reflexes. There are some sets where there is a variation between in correspondences between alveolars and retroflexes.

(38) **colang/corlang* 'ripe, cooked': BGW *corleng*, Ja *colang*, M *curlak*, Nu *lharang*, W *colong*

This militates to some degree against reconstruction of the contrast. However this is relatively uncommon, and does not constitute serious evidence against reconstruction. I therefore reconstruct an apical contrast for stops and laterals in pGN.

The contrast between the alveolar tap /rr/ and the retroflex approximant /r/ differs from the other apical contrasts in that there is additionally a contrast in sonority class. Given this double contrast, it is unsurprising to find that the distinction between the two segments is well established and may be reconstructed for pGN

(39) **rerr* 'camp': BGW *ret*, Ja *rlerr* (*rlet-* in compounds), Ngal *rerre*, Ngan *rerr*, W *rle*

(40) **ngerq-* 'to breathe, to have a breath, to have a rest': BGW *ngeq-*, D *ngerq-wolwol-* 'to be short-winded', Ja *ngerq-*, M *ngirq-* 'to breathe', Ngal *ngerq-*, R *ngernger* 'to get puffed', W *nge/irq-* 'to breathe' (Ritharrngu *ngirq-* 'to breathe')

(41) **werq-* 'to vomit': BGW *we(r)q-*, Ja *werq-*, Ngal werq-, Ngan *werq-*, W *weq-* (Wagiman *we*, Wardaman *we-mi-yi-*)

While it appears that the reconstruction of an apical contrast in morpheme-medial and -final position is well supported, the situation is rather different for morpheme-initial position. In Jawoyn (Merlan n.d.), Ngalakgan (Merlan 1983:9–10), and Warray (Harvey n.d.) all prefix and root-initial apicals are retroflex, whereas suffix-initial apicals are alveolar. In Ngandi (Heath 1978b:9–10) all root- and word-initial apicals are retroflex, while initial apicals in suffixes and non-word-initial prefixes are alveolar. In Nunggubuyu (Heath 1984:18) and Rembarrnga (McKay 1975:14), there is a contrast between alveolars and retroflexes morpheme-initially. However, this contrast bears hardly any load. Most occurrences of initial retroflexes are conditioned by an initial retroflex in the following syllable. Nunggubuyu (Heath 1982) shows a less regular distribution. Nearly all morpheme-initial apical stops and laterals are retroflex. However, the majority of morpheme-initial apical nasals are alveolar.

It does not therefore appear that the initial apical contrast, where it does occur, is of a substantive nature. Consequently, I do not reconstruct a contrast in morpheme-initial position for pGN. I use archiphoneme symbols for initial apicals in roots and prefixes. Suffix-initially, I reconstruct alveolars.

3.3 Initial /l/ and initial /r/

A contiguous bloc of Gunwinyguan languages: Jawoyn, Mangarrayi, and Warray, do not permit /r/ in either word- or root-initial position. In these languages, initial **r* and initial **L* are both reflexed as /L/. The other GN languages permit /r/ and /L/ both word- and root-initially. Correspondence sets involving these other languages show either /r/ or /L/ consistently in initial position.

(42) **Leppal* 'spotted bream': D *rleppal*, Ja *rleppal*, M *rlipal*, Ngal *rleppal*, Ngan *rleppal* (Ritharrngu *rlipal*)

(43) **rerr* 'camp': BGW *ret*, Ja *rlerr* (*rlet-* in compounds), Ngal *rerre*, Ngan *rerr*, W *rle*

It would appear therefore that a contrast between initial **r* and initial **L* should be reconstructed for pGN. This contrast has later been neutralised through a phonotactic restriction against word- and root-initial /r/. There is evidence from Wagiman which suggests that the restriction was probably firstly against word-initial /r/, and that this restriction was later extended to root-initial /r/. Verb roots in Wagiman (44) synchronically show a variation between initial /l/ and initial /r/.

(44)

Null prefix	Consonant-final prefix	Vowel-final prefix
Ø-le-na	*ngan-le-na*	*nga-re-na*
3sg>3sg-spear-Past	3sg>1sg-spear-Past	1sg>3sg-spear-Past

This variation is most directly explained as having arisen from restrictions against /r/ in word-initial and postconsonantal positions. However, unlike Jawoyn, Mangarrayi, and Warray, this restriction has not been extended to root-initial position.

3.4 The laminal stops

Although there is evidence for two reconstructable laminal series, there is considerable variety in correspondences involving laminal stops. These variations are almost entirely confined to morpheme-initial position, and chiefly word- and root-initial position.

A large number of correspondence sets have a palatal stop in all languages, except that Nu reflexes, where they exist, have a palatal glide:

(45) **cang-ka-* 'to hunt': BGW *cang-ka-*, D *cang-ka-*, Ja *cang-ka-*, M *cang-ka-*, Ngal *cang-ka-*

(46) **ceny* 'fish': BGW *ceny*, D *ceny*, Ngal *ceny*, Ngan *ceny*, R *ceny*

(47) **cak* 'ant sp.': Ja *cak*, BGW *cak*, Ngan *caq*, Nu *yaak*

These correspondence sets are presumably to be reconstructed with **c*.

However, other sets involve a range of segments, as summarised in Table 4. This is the range of correspondences found with verb roots (Alpher, Evans & Harvey this volume). The following correspondence sets illustrate this range in nominals.

(48) **thangku* 'meat': Ngal *cangku*, Ngan *thangku*, Nu *lhangku*, R *tangku* (Ritharrngu *thaangku*)

(49) **thiw* 'liver': BGW *-tiw*, Ngal *-ciwi*, Ngan *-thiw*, Uw *-ti*, W *-ci*

(50) **thulu* 'corroboree': BGW *tule*, D *tulu*, Ngal *culu-we* 'to sing', Ngan *-thulu*, R *tulu*

Table 4: Reflexes of reconstructed */th/

pGN	*/th/
Bininj Gun-wok	/t/
Dalabon	/t/
Jawoyn	/c/
Mangarrayi	/c/
Ngalakgan	/c/
Ngandi	/th/
Nunggubuyu	/lh/
Rembarrnga	/t/
Uwinymil	/t/
Warray	/c/

The proto-phoneme to be reconstructed for the divergent set of correspondences in Table 4 is presumably **th*. It is not plausible to reconstruct this set with an apical stop as the proto-phoneme, since correspondence sets reflecting an apical stop involve a further and quite different set of reflexes.

(51) **-Tak* 'pelvis': BGW *-tak* 'pelvis' ~ *rak-mo* 'hipbone, pelvis', D *rak-mo* 'hipbone', Ja *-rtak* 'anus', Nu *rtaak* 'hipbone', W *-rtek* 'anus, bottom'

(52) **Tilq-* 'to paint': BGW *tilq-*, D *rtilq-*, Ja *rtilq-*, M *rtil-*, W *rtilq-* (Wagiman *tilq*, Wardaman *rtilma*)

(53) **Towk-* 'to burst': BGW *towk-* 'to go off [a gun]', D *rtowk-*, Ja *rtowk-*, M *rtawk*, R *rtow-* 'to go bang' (Wagiman *towk*)

(54) **Tulq* 'branches used as camouflage': BGW *tulk* 'tree', D *tulq* 'tree', Ngan *rtulq*, Nu *rtuul*, R *tulq* (Ritharrngu *rtuulq*)

The **th* segment had a phonotactically restricted distribution in pGN, with nearly all examples being word-initial. The only widespread medial correspondence set is the verbal inchoative suffix **-thi* (Alpher, Evans & Harvey this volume), where **th* is morpheme-initial. It may also be noted that there is no evidence for a dental nasal **nh*.

There are some correspondence sets which show irregularity in the reflexes of **c* and **th*. These irregularities occur between, and even within, languages. Irregularities between languages are illustrated in the following examples.

(55) **thenge* 'foot': BGW *-tenge*, D *tengv*, Ngan *theng*, R *canga* (Wardaman *-ceng*)

(56) **culng* 'dust': BGW *-culng*, D *culng*, Ja *caculng*, R *turlng*

(57) **cele* 'urine': BGW *-tile*, Ngal *cele*, R *cala*

(58) **colang/corlang* 'ripe, cooked': BGW *corleng*, Ja *colang*, M *curlak*, Nu *lharang*, W *colong*

In (55), the weight of numbers favours the reconstruction of an initial **th*, but Rembarrnga has a /c/ reflex. In (56), the weight of numbers favours the reconstruction of an initial **c*, but Rembarrnga has a /t/ reflex. In (57), the Bininj Gun-wok /t/ and Rembarrnga /c/ reflexes are incompatible with one another. In (58), the Bininj Gun-wok /c/ and Nunggubuyu /lh/ reflexes are incompatible with one another. In none of these correspondence sets does it appear likely that borrowing is a factor. Many of the forms show other phonological differences, in addition to the variation in the place of the initial coronal consonant. Bininj Gun-wok and Dalabon provide an example of language-internal inconsistency.

(59) **-tharr* 'thigh, leg (pPN **DHarra* 'thigh'): BGW *-tat*, D *tarru*, Ja *-carr*, W *-ce* (Kamu *cerri*, Malak-Malak *cet*, Matngele *cerri*) ?M *catpa*, ?Ngal *carrppic*, ?Ngan *tharrppic*, ?Nu *lharrpic*, ?R *tarrama* (?Warndarrang *yarrpic*)

(60) **-cat-mo* 'thigh bone': BGW *-cat-mo* 'marrow in kangaroo thigh bone', D *cat-mo*, Ja *-cat-mo*, W *-cat-mu*

The form for 'thigh, leg' is presumably to be reconstructed with an initial **th*, particularly if the questionable forms are in fact reflexes. However, in Dalabon and Bininj Gun-wok, the compound form 'thigh bone' shows a /c/ reflex.

The reflexes of **c* and **th* are generally consistent, however, and consequently I reconstruct both laminal stops. The irregularities in reflexes are not entirely unexpected, particularly between /t/ and /c/ reflexes. There are phonetic motivations for irregular variation between /t/ and /c/ in prevocalic position, particularly word-initial position. These motivations come from the conflict between articulatory and perceptual considerations.

From an articulatory perspective, alveolars are the least complex and therefore most favoured segments generally (Hamilton 1996:8–10). From a perceptual perspective, palatal stops appear to have more robust release cues than other kinds of coronal stops and are therefore favoured over them when there is no preceding vowel (Hamilton 1996:12–16, 51). If articulatory considerations are favoured in a language, then this would lead to the replacement of palatal stops by alveolar stops. On the other hand, if perceptual considerations are favoured, then this would lead to the replacement of alveolar stops by palatal stops.

Heath (1978a:35–36) argues that the dentals in Ngandi and Nunggubuyu are reflexes of an original undifferentiated laminal stop **TH*. He proposes that the dental reflexes reflect an indirect diffusion, assimilating the Ngandi and Nunggubuyu phonological systems towards those of the Yolngu languages, where the dentals appear to have been contrastive segments for a considerable time. Under Heath's analysis, this diffusion is of some antiquity as the dentals in Nunggubuyu show the effects of lenition: **thth* > *th*, and **th* > *lh*.

There are a number of correspondence sets involving **th* which are of considerable antiquity.

(61) Verbs: **tha* 'to stand up', **thi* 'to be standing', *tho* 'to chop', **thowi* 'to die', *thu* 'to tell off' (Alpher, Evans & Harvey this volume)

(62) Verbal suffixes: **-thi* 'inchoative' (Alpher, Evans & Harvey this volume)

(63) Body-part Nouns: **thala* 'mouth', **tharr* 'thigh', **thenge* 'foot', **thiw* 'liver'

Although there are many correspondence sets with initial **c*, they have a more skewed distribution across word classes: none are verb roots. At the same time there are hardly any examples of **th* in intervocalic position: **ngaththu* 'cycad' is the only plausible example, but this could well be a loan (it is also found in the Yolngu languages). The highly skewed distribution of evidently older forms in favour of **th* verb-root initially and **c* intervocalically suggests another hypothesis as to the history of laminal stops among the Gunwinyguan language. It suggests that the reflexes in Table 5 are the original reflexes of an undifferentiated laminal stop **TH* in word- and morpheme-initial position. In those languages where **TH* had apical or dental reflexes, the palatals were later introduced into these positions by loans and indirect diffusion.

I do not, however, adopt this hypothesis, for two reasons. Firstly, the hypothesis cannot presently be fully evaluated, because there has only been limited research on correspondence sets across Australia. It might be that further research will provide convincing examples of an older contrast between **c* and **th*. Secondly, given that this is an initial reconstruction, it seems preferable to set out all contrasts which appear, initially, to be reasonably well supported. It may be that further research will show that some of these contrasts are not as well supported as they might initially appear.

Nonetheless, it must be recognised that the contrast between the two laminal stops is not as well supported as other similar contrasts, such as the contrast between the apicals. There is no evident alternative hypothesis to an original contrast between the apicals in pGN, though there are some irregularities in the reflexes of this contrast. It may be that there was no apical contrast in pGN, but if so, an explanation for the reasonably consistent distribution of alveolar vs retroflex reflexes remains to be provided. With the laminal contrast, on the other hand, there is a plausible alternative hypothesis which explains the distribution of the various laminal and apical reflexes.

3.5 The glottal stop

A phonemic glottal stop is an areal feature of the languages of the Top End. It occurs in all of the Gunwinyguan languages, except Nunggubuyu, and in the Yolngu languages. In all of the languages in which it occurs glottal stop has a very restricted distribution both phonologically and morphologically. It occurs only in syllable-final position, and is usually found at a morphological boundary. Its commonest position of occurrence is as the final segment in coverb roots. The majority of coverb roots, which would otherwise be sonorant-final, have glottal stop as their final segment. Coverb roots are generally consistent in either having or not having a glottal stop as their final segment.

(64) **ca(p)pul-* 'to smoke (tr): D *cappul-*, Ja *cappul-*, M *capul-*, Uw *capul-*, W *capul-* (Wagiman *tapulp ~ tappul*, Wardaman *capulma*)

(65) **ngal/rrq-* 'out/up': BGW *ngarrq-* 'to get out', Ngal *ngalq-* 'to climb/go up', Ngan *ngalq-* 'to go up', R *ngalq-* 'to climb/go up', W *ngalq-* 'to come/get out/up'

(66) **corrng-* 'to straighten, to stretch': BGW *corrng-*, D *corrng-*, Ja *corrng-*, M *carrng-*, Ngal *corrng-*, R *corrng-*, W *cung-* (Wagiman *corrng-*)

(67) **mirrngq-* 'to be hot': BGW *mirrq-*, D *mirrngqmirrng-*, Ja *mirrngq-*, W *mirrngq-* (Kamu *mirrngq*, Wagiman *mirrngq*)

Given the consistency and unpredictability of the contrast between /q/ and Ø finally in coverb roots, **q* must be reconstructed as a contrastive segment within the inventory of pGN. Nonetheless, its distribution, both synchronic and diachronic, is evidently very different from that of other segments in the inventory. Following Trubetzkoy (1969:275–279), the glottal stop can be analysed as a boundary signal, both synchronically and apparently in pGN.

This boundary-signal function relates to a derivational function that appears to be reconstructable for glottal stop. In a number of GN languages, the glottal stop appears in verbalising compounds, suffixed to the root which is being verbalised.

MANGARRAYI

(a) Transitivisation of non-verbal predicate: *rtanginy* 'clean', *rtanginy-q-ma* 'to make clean' (Merlan 1982:184);

(b) Coverbalisation of loans: *payntim* 'find [Kriol]', *payntim-q ma* 'to find' (Merlan 1982:129);

Paradigm of *(-)ma*: *(-)ma-ny* 'PP', *(-)ma-ri* 'PI', *(-)ma-Ø* 'PRES' [also functions as independent verb meaning 'to do, to say']

BININJ GUN-WOK

(a) Call someone by kin term X: *cakerr* 'younger brother', *cakerr-q-me* 'call someone younger brother'

(b) Transitivisation of non-verbal predicate: *kele* 'fear', *kele-q-me* 'to frighten someone'

(c) Coverbalisation of loans: *worrgim* 'work [Kriol/English]', *worrkim-q-me* 'to work [Gundjeihmi dialect of Bininj Gun-wok]'

(d) Coverbalisation of phrases: *kak* 'night', *poken* 'two', *nga-kak-poken-q-me* 'I will stay two nights'

Paradigm of *-me*: *-mi-ny* 'PP', *-me-ni* 'PI', *-me-n* 'NP' [otherwise functions as inchoative]

NGALAKGAN

(a) Call someone by kin term X: *mokkol* 'father', *mokkol-q* 'to call someone father'

(b) Coverbalisation of loans: *cartim* 'start', *cartim-q-mi*

(c) Coverbalisation of verbs: *yini* 'to do, to say', *yini-q-mi* 'to do thus, to say'

(d) Coverbalisation of non-verbal predicate: *yukka* 'front', *yukka-q-mi* 'to go in front'

Paradigm of *-mi*: *-mi-ny* 'PP', *-me-riny* ~ *-mi-yiny* 'PI', *-Ø* 'PRES'[occurs as an auxiliary]

NGANDI

(a) Call someone by kin term X: *yalngunyca* 'daughter's child', *yalngunyca-q-thu* 'to call someone daughter's child' (Heath 1978b:41)

(b) Coverbalisation of verbs: see discussion of **ya-ma* 'to tell off' in Alpher, Evans and Harvey

Paradigm of *-thu*: *-thi* 'PP', *-thu-ngi* 'PI', *-thu-ng* 'FUT' [occurs as an auxiliary]

REMBARRNGA

(a) Coverbalisation of non-verbal predicates: *kiyang* 'long' *kiyang-q-mi* 'to make something long' (McKay 1975:98)

(b) Coverbalisation of verbs: *paringanv* 'hang up-Infinitive', *paringanv-q-ka* ~ *paringanv-q-wa* 'to cause to be hanging up' (McKay 1975:159–162)

Paradigm of *-mi*: *-mi-ny* 'PP', *-mvrn* 'PI', *-Ø* 'PRES' [occurs as an auxiliary]

Paradigm of *-ka*: *-ka-nginy* 'PP', *-ka-niny* 'PI', *-ka-n* 'PRES' [also means 'to take']

Paradigm of *-wa*: *-wa-Ø* 'PP', *-wa-niny* 'PI', *-wa-n* 'PRES' [occurs as an auxiliary]

WARRAY

(a) Transitivisation of non-verbal predicate: *lurra* 'back', *lurra-q-ma* 'to bring someone/thing back.'

(b) Coverbalisation of loans: *ropim* 'rob [Kriol/English]', *ropim-q-ma* 'to rob'

Paradigm of *-ma*: *-mi-ny* 'PP', *-ma-rl-any* 'PI', *-ma-rl* 'NP' [occurs as an auxiliary]

There are two reasons for reconstructing the glottal as a suffix **-q* to the root which is being verbalised, rather than as an initial segment of the verbalising auxiliary. Firstly, the auxiliaries form a disparate set, which do not derive from a common ancestor, and all of the auxiliaries otherwise appear without the glottal stop. Secondly, in Mangarrayi, when the coverb root and auxiliary appear as independent phonological words, the glottal stop is suffixed to the coverb root and not attached to the auxiliary.

In a number of its uses, the **-q* suffix has a transitivising function, and this may have been an important component of the original meaning of the suffix. The one element common to all its uses is that it derives a coverb root, in some cases from morphologically complex material. This ability to derive a coverb root from morphologically complex material is unusual. Most morphemes which derive root-level forms attach only to items which are themselves root-level morphemes.

The historical relation between this derivational function of the glottal stop and its appearance as the final segment of many coverb roots is uncertain. Coverb roots show distinctive phonotactic patternings in all languages which have this part-of-speech category (see Merlan 1982:126–128 for a discussion of Mangarrayi — the general issues raised here are applicable to all languages with coverb roots).

It may be that in some very early proto-form, preceding pGN, the coverb class was a marginal part-of-speech class, derived by the suffixation of the glottal stop, a segment which did not otherwise appear in the inventory of the language. As the coverb class became more significant, the derivational function of the glottal stop was lost in more and more cases. Alternatively, it may be that the common appearance of the glottal stop as the final segment of coverb roots is to be reconstructed as a part of the generally marked phonotactics of the coverb root class. At some stage in pGN, speakers adapted this particular distinctive pattern as a morphological derivation.

Whatever the relationship, the glottal stop can be reconstructed for both functions in pGN. As with some other proto-phonemes, there are some examples of irregular correspondences in coverbs, involving the glottal stop. In some sets, it alternates with a dorsal or labial stop, or with *Ø*.

(68) **pirrq-* 'to clean': BGW *pirrp-*, D *pirrq-*, Ja *pirrq-*, W *pirrq-*

(69) **Lowk/q-* 'to prise off': D *rlowk-*, Ja *rlowk-*, M *rlowq-*

(70) **purrq-* 'to slap one's thighs': BGW *purrq-* 'to clap', Ja *purrq-*, M *purrpurr-* 'to clap hands, slap time', W *purrq-* (Kamu *pul*, Wagiman *purrq*, Wardaman *purrma* 'to beat leg')

This does not reflect a general instability in the diachrony of the glottal stop, but rather isolated irregularities in particular languages.

The situation with glottal stop finally in nominal roots is very different from that of coverb roots. Correspondence sets involving a final glottal stop in nominal roots show inconsistency across the GN languages. In considering the status of glottal stop in nominal roots, it is firstly necessary to take note of a significant areal division in the patterning of the glottal stop. The western bloc of GN languages with a phonemic glottal stop: Jawoyn, Mangarrayi, and Warray do not permit it finally in nominal roots. The eastern languages, on the other hand, do permit glottal stop finally in nominal roots, and it shows a reasonably high frequency of occurrence in this position. However, even among the eastern languages, the correspondence sets show great inconsistency. Consider the pairs in Table 5 from Ngalakgan and Ngandi.

Table 5: Inconsistency in Ngalakgan-Ngandi /q/ correspondence sets

	Ngalakgan	Ngandi	
Ø: q	*parnarr*	*parnarrq*	'Owenia vernicosa'
q: q	*pirlq*	*pirlq*	'sharp point'
k: q	*curerrk*	*curerrq*	'bowerbird'
q: k	*martawq*	*martawk*	'friarbird'

As illustrated, many correspondence sets involving the glottal stop also involve either /k/ or Ø. Further, these correspondence sets consistently involve either /k/ or Ø. They do not randomly involve both /k/ and Ø.

(71) **parnarr* 'Owenia vernicosa': Ja *parnarr*, M *parnarr*, Ngal *parnarr*, Ngan *parnarrq*, Nu *parnarr*, ?R *ngarnarr* (Marra, Wardaman, Warndarrang *parnarr*)

(72) **curerrk* 'bowerbird': D *curerrk*, Ja *curerrk*, M *curerrkmin*, Ngal *curerrk*, Ngan *curerrq*, W *cuyek* (Kungarakany *cororrkme*, Ritharrngu *curirrq*, Warndarrang *curirr*)

The consistency of /k/ or Ø, as opposed to the inconsistency of the glottal stop, argues that **k* and **Ø* should respectively be reconstructed, and not the glottal stop. If the glottal stop were reconstructed, on the basis of forms in particular eastern languages, then there would be no way of explaining why the other languages, both other eastern languages and the western languages, consistently show either /k/ or Ø.

The glottal stop appearing finally in nominal roots in the eastern languages does not derive from the proto-forms. Rather, it derives from an extension of the boundary marking function of the glottal stop. As we have seen, the glottal stop can be reconstructed with a boundary-marking function for the coverb class. The eastern languages have extended the glottal stop in this function to the other major open class: the nominals. The glottal stop has been added to sonorant-final roots in some cases. It has replaced /k/ in some cases. The dorsal and glottal stops are perceptually very similar as codas, and substitutions between the two are unsurprising. As we have seen, this substitution is also found with coverb roots (70).

Therefore, I do not, in general, reconstruct the glottal stop finally in nominal roots. The only cases where I do reconstruct it are when correspondence sets involving only the eastern languages show a consistent final glottal stop. There are also a few examples of glottal stop being reconstructable at reduplication boundaries. Synchronically, the glottal stop shows a complex interaction with the phonology of reduplication in most GN languages (Harvey 1991). This reconstruction does not examine reduplication.

3.6 The mid vowels

There is good evidence that the mid vowels are to be reconstructed for pGN.

(73) **peremelk* 'shoulderblade', **ngerq-* 'to breathe', **-ngey* 'name', **rerr* 'camp', **werq-* 'to vomit'

(74) **tho-* 'to strike', **colang* 'ripe', **corrng-* 'to stretch', **mot-* 'to be quiet', **wo-* 'to give'

The widespread distribution of these correspondence sets, and the relative resistance to diffusion of the lexical domains to which they belong, provide reasonable evidence for positing **e* and **o* as contrastive pGN phonemes. This viewpoint is supported by the high degree of consistency of mid-vowel correspondances in cognate sets.

4 Language specific sound changes

4.1 Bininj Gun-Wok

**rr > t / _#*

**-pirr* 'hand' > *-pit*, **carr* 'thigh' > *-tat*, **mutmurr* 'fly sp.' > *mutmut*, **rnorr* 'stinking' > *nut*, **rerr* 'camp' > *ret*, **yarr* 'yabby' > *yat*

Exceptions

**karnamarr* 'black cockatoo' > *karnamarr*, **calarr* 'centipede' > *calarr*, **cenkererr* 'grevillea sp.' > *cenkererr*, **cularr* 'goanna sp.' > *cularr*, **warlppurr* 'pubic tassle' > *warlppurr*, **yipalirr* 'dillybag' > *yipalirrr*, **ngal-yurr* 'lightning' > *al-yurr* 'Leichhardts' grasshopper (signals lightning)'

This change results from the elimination of an earlier morphophonemic alternation between /r/ and /t/ root-finally. Historically the /t/ final forms occurred when the root was compounded, and the /r/ final forms elsewhere. This alternation is still preserved in Jawoyn (*-carr/cat-* 'thigh', *-rnorr/rnot-* 'stinking', *rlerr/rlet-* 'camp'). It can also be reconstructed for Warray, though it is now obscured by other sound changes (*-ce/cat-* 'thigh'). It may be noted that the alternation appears to have been restricted to monosyllabic roots, allowing for the reduplicated form **mutmurr* 'fly'. The motivations for this restriction remain to be established.

**r > Ø/_ C, a_a*

**parang* 'cheeky' > *pang*, **patporng* 'wallaby sp.' > *patpong*, **-pork* 'track' > *-pok*, **carang* 'dreaming' > *cang*, **corq-* 'to cough' > *coq-*, **merk* 'tick' > *mek*, **-ngerng* 'pouch' > *-ngeng*, **ngerq-* 'to breathe' > *ngeq-*, **war-pu-* 'to sing (tr)' > *wa-pu-*, **werq-* 'to vomit' > *we(r)q-*

Preservation of /r/

**rtorok* 'tree sp.' > *torok*, **catngerecngerec* 'green tree frog' > *catngerecngerec*, **cenkererr* 'grevillea sp.' > *cenkererr*, **waral* 'spirit' > *waral*, **waran* 'snake sp.' > *waran*, **warow-* 'to toss' > *warow-*, **wirik* 'possum' > *wi/urik*

Synchronically, the realisation patterns of the apical vocoid /r/ present considerable complexities in Bininj Gun-wok (Evans 2003). There is variation in both the appearance and the localisation of this segment. For example, Evans (2003) states that he has recorded *weq-* 'to vomit' as [*req- ~ weq- ~ werq-*], and *berk* 'death adder' as [*brek ~ berek ~ berk ~ bek*]. Evans proposes that these patterns are to be understood in terms of /r/ attaching to the syllable rather the skeleton. Evans also notes that younger speakers produce fewer /r/ forms than older speakers. Further, Evans (2003) states that there is a correspondence between initial /r/ in the eastern dialects of Bininj Gun-wok and initial /y/ in the western dialects. Overall it appears that there has been a drift towards the elimination of /r/ in certain positions in Bininj Gun-wok. A similar drift is evident in Warray (§4.7).

**a > e*

**patca* 'to hit' > *pacce*, **parla* 'vagina' > *parle*, **canak* 'yam sp.' > *canek*, **-kanam* 'ear' > *-kanem*, **-karra* 'shin' > *karre*, **punykarrang* 'wet season' > *pangkerreng*, **-kuyang* 'tall' > *-kuyeng*, **col/rlang* 'ripe' > *corleng*, **morna* 'to carry on shoulder' > *morne-ma-*, **warr(a)* 'bad' > *warre*, **welang* 'successful hunter' > *weleng*

This change occurs in unstressed, and usually final, syllables which are either open or have a dorsal coda. There are a number of cases where it has not applied.

**karrang* 'mother' > *karrang*, **kut/rtang(yi)* 'clever fellow' > *kurtangyi*, **carnarr* > *carna* 'saliva', **cangarak* > *cangarak* 'chin'

There is also one example of it applying to a /u/ vowel.

**thulu* 'corroboree' > *tule*

4.2 Dalabon

Shift of unstressed [-back] vowels to high central *v*.

**partrti* 'marchfly' > *partrtv* 'mosquito', **karta* 'maybe' > *kartv*, **kanam* 'ear' > *kanvm*, **karnrteken* 'dingo' > *karnrtvkvn*, **kanga* 'belly' > *kangv*, **karrpil/rlk/q* 'yam sp.' > *karrpvrlk*, **kurrumara* 'corpse' > *kurrmvra*, **cala* 'mouth' > *talv*, **canak* 'yam sp.' > *canvk*, **thenge* 'foot' > *tengv*, **cirrpili* 'bony bream' > *cirrpvlv*, **langa* 'hand' > *langv* 'paw', **marne-* 'benefactive' > *marnv-*, **rangem* 'male' > *rangvm*, **walam* 'south' > *walvm*, **yakki* 'nothing' > *yakkv*, **yappanq* 'two' > *yappvnq*, **yekke* 'cold weather' > *yekkv*

This change is commonly attested in Dalabon. The precise factors conditioning the reduction remain to be established. There is one example of reduction in a monosyllable, where the vowel is of necessity stressed.

**ngerq* 'heart' > *ngvrk*

4.3 Jawoyn

Lenition of Medial Singleton Stops

**-pa* 'collective' > *-wa*, **-pa* 'perlative' > *-pa/-wa*, **parraca* 'kookaburra' > *parraya*, **pirti* 'beeswax' > *piri*, **picip-* 'to squeeze' > *piyip-*, **purta* 'plant sp.' > *pura*, **pukurr* 'dream', > *puwurr*, **punupun* 'file snake' > *punuwun*, **rtewtew* 'dollar bird' > *rteworewo*, **kartap* 'spider' > *karap*, **kitik-* 'to tickle' > *kirik-*, **kicak* 'some/everything' > *kiyak*, **kurtang(yi)* 'clever fellow' > *kurang*, **kurtuk* 'black' > *kurukkuruk*, **capiny* 'foreskin' > *cawiny*, **cartuk* 'red apple' > *caruk*, **cakorlk* 'gudgeon sp.' > *caworlk*, **carrapuypuy* 'floater insect' > *carrawuywuy*, **cirrpiyuk* 'whistleduck' > *cirrwiyuk*, **cokong* 'aunt' > *cowong*, **cukerre* 'female black kangaroo' > *cuwerre*, **Lagi* 'to throw' > *rlayi*, **martawk* 'friar bird' > *marawk*, **martayin* 'ceremony' > *marayin*, **melpe* 'mud' > *melwe*, **mogurrgurr* 'clan' > *mowurrwurr*, **warracan* 'turtle sp.' > *warrayan*, **wartapic* 'tree sp.' > *warawic*, **war-pu-* 'to sing (tr)' > *war-wu-*, **wocal* 'black plum' > *woyal*

Exceptions

**pa(p)pa* 'sibling' > *papa*, **pucuq-* 'to twist' > *pucuq-*, **Tapi* 'block tobacco' > *rtapi*, **karterre* 'bee sp.' > *karterre*, **kartukartu* 'women (avoidance term)' > *kartukartu*, **karrartarta* 'breastplate' > *karrartarta*, **cipak* 'fish' > *capak-*, **cateytey* 'grasshopper' > *catete*, **cacak* 'palm sp.' > *cacak*, **cotet* 'nail-tailed wallaby' > *cotet*, **martu* 'deep coolamon' > *martu*, **malawirtiwirti* 'hawk sp.' > *malawitiwiti*, **nga(c)ci-* 'to sneeze' >

ngaci-, **ngarterr* 'fishing line' > *ngarterr*, **walapi* 'fishnet' > *walapi*, **yipalirr* 'dillybag' > *yipalirr*

The lenition appears to have taken place in the environment of a preceding sonorant and a following vowel. There do not appear to be any phonological factors differentiating the group of correspondence sets which involve lenition from the set of correspondences which do not involve lenition. The fact that the group of lenition sets involves a larger number of forms and a wider range of lexical domains argues that it represents an inherited correspondence set in Jawoyn. Nearly all terms in the other group of correspondence sets refer to natural species or material objects, which suggests that this correspondence has arisen through the diffusion of these terms into Jawoyn.

4.4 Mangarrayi

*Nasal > Stop/_#

This change is only attested in a small number of vocabulary items.

**pam* 'head' > *pap*, **polo/ung* 'rainbow serpent' > *polokpan*, **karnpany* 'palm sp.' > *karnpac*, **calng* 'spinifex' > *calk*, *-colang* 'ripe' > *-curlak*, **marriny* 'girl' > *-marric*, **wam* 'sugarbag' > *wap*

However, it is attested in the verbal paradigms. As such, it would appear to be an old change within Mangarrayi.

**po-m* 'hit-PP' > *pu-p*, **wa-m* 'follow-PP' > *wa-p*, **thu-ny* 'tell off-PP' > *cu-c*, **thu-ng* 'tell off-NP' > *cu-k*

The nasal–stop correspondence is not attested with apicals, and this includes the verbal paradigms. In a number of these paradigms, a Non-Past suffix **-n* can be reconstructed. This reconstructed **-n* corresponds to /n/ in Mangarrayi (**pu-n* 'hit-NP' > *pu-n*, **wa-n* 'follow-NP' > *wa-n* 'visit-NP' Alpher, Evans and Harvey this volume).

The Mid Vowels

The mid vowels do not occur in bound morphemes, personal pronouns, deictics, or verb roots in Mangarrayi. They are found in nominal roots and coverb roots and a few particles and interjections (Merlan 1982:181). Even within these open lexical classes, which do permit the mid vowels, there are a number of correspondence sets where Mangarrayi has a high or a low vowel as a reflex of a historical mid vowel.

**e* > *i*

**Teq-* 'to pinch' > *rtiq-*, **kenykeny* 'skink sp.' > *kinyqkiny*, **Leppal* 'spotted bream' > *rlipal*, *?Lerrq-* 'to light a fire' > *rlirr* 'to burn too much', **melang* 'light' > *miling*, **mel/rleny* > *mirliny* 'nose', **mol/rlerreny* > *mulirriny* 'large bones of arm and leg', **ngerq-* 'to breathe' > *ngirq-*, **welek* 'to swallow' > *wirlig*

**e* > *e*

**Tewtew* 'dollar bird' > *rteworewan*, **curerrk* 'bowerbird' > *curerrkmin*, **merlmerlmi* 'prickle heat stick' > *merlmerlmin*, **men-* 'to watch' > *men-*, **ngalelek* 'white corella' > *ngelele*

**o > a*

rtowk-* 'to burst' > *rtawk*, ?rtor* 'viscera' > *rtara* 'stomach', ?**korrq-* > *karrq-*, **-korlo* 'back' > *-karla*, **corrng-* 'to stretch' > *carrng-*, **Lorrk* 'to be cold' > *rlarrk*, **Norr* 'stinking' > *rnatnarr*

**o > u*

?**poyq-* > *puyq-* 'to show', *-colang* 'ripe' >*-curlak*, **mol/rlerreny* > *mulirriny* 'large bones of arm and leg', **No-ma-* 'to smell (tr)' > *rnuma*

**o > o*

**polo/ung* 'rainbow' > *polokpan*, **polyong* 'to camp out' > *polyong*, **conggo* 'bee sp.' > *conggo*, **corlwana* 'female kangaroo' > *corlwana*, **Lowk/q* 'to prise off' > *rlowq-*, **mornrte* 'power/poison' > *mornrte*, **morropporl* 'catfish' > *morroporl*

4.5 Ngandi

Fortition of **y > c*

This change is only attested in three correspondence sets.

**puy-* 'smell' > *puc-*, **koy(ng)* 'soup' > *koc*, **-ngey* 'name' > *ngic-*

However, **ngey* 'name' has a very widespread distribution, and **puy-* 'smell' is discontinuous (it occurs only in Ngandi and Warray). Therefore the correspondence may be analysed as old. On initial examination, it might appear that a lenition of **c > y/_+* should be posited in accordance with the usual historical preference for lenition. There are however at least two reasons for not positing this course of development. Firstly, there are a number of sets involving Ngandi, which show /c/ – /c/ correspondences:

(75) **palkkic* 'wallaby' (D, M, Ngan, R), *pirtic-* 'nearly' (Ngal, Ngan, R), **Turic* 'bird sp.' (Ngal, Ngan), **mic* 'louse' (Ngal, Ngan, Nu, R), **monic-* 'secretly' (BGW, Ngal, Ngan, R), **muc* 'rainbow' (BGW, Ngal, Ngan [Rith]), **wac-* 'both' (Ngal, Ngan), *werec* 'rainbow fish' (D, Ja, Ngan, R [Rith]), **wor(o)cwor(o)c* 'cockroach' (D, Ngan [Rith])

If a development of **c > y/_+* is posited, then it would be necessary to account for these correspondence sets. Given that these correspondence sets are less widespread than that of **ngey* 'name', they could be accounted for in terms of borrowing. However, there still remains the second reason for not positing a lenition: its lack of plausibility. Morpheme-final lenition is not otherwise an attested process in any Gunwinyguan language. It is a process which is entirely contrary to their preference for roots from the two major open classes, nominals and non-finite verbs, to have closed final syllables. Further, even if it was allowed that such a lenition had exceptionally taken place, there does not appear to be any good reason why it should have been limited to the palatal stop.

On the other hand, fortitions in morpheme-final position are attested among the Gunwinyguan languages. Jawoyn, Bininj Gun-wok, and Warray show a fortition of **rr > t* in morpheme-final position. As discussed in (§4.1), this fortition originated in the compounded forms of **rr* final roots, and in Bininj Gun-wok it then spread to the free forms. The roots

puc- 'smell' and *ngic-* 'name' only occur as compound forms in Ngandi. As such the Ngandi fortition is entirely parallel to the fortition found in Jawoyn, Bininj Gun-wok, and Warray.

4.6 Rembarrnga

Reduction of unstressed vowels.

**partrti* 'marchfly' > *partrtv(q)*, **pe/irrke/iq* 'green plum' > *pvrrkv/iq*, **karnrtvken* 'dingo' > *karnrtvkvn*, **kirnqkirn* 'catfish sp.' > *kvrnqkvrnq*, **kuttapirlq* 'bird sp.' > *kuttappvrlq*, **ciliwirn* 'Capparis umbonata' > *cilvwvrn*, **Langa* 'hand' > *langv*, **malawitiwiti* 'hawk > *malawvrtvwvrtv*, **ngurniq* 'firestick' > *ngurnvq*

This change appears to be less common in Rembarrnga, than in the neighbouring Dalabon. As with Dalabon, the factors conditioning the reduction remain to be established.

Vowel Breaking

There are a number of examples in Rembarrnga where vowels have disyllabic Vy/wV reflexes.

**pon* 'Dalabon' > *puwan*, **kony* 'kangaroo (generic)' > *kuweny*, *koq* 'eye' > *kuwaq*, **kom* 'back of neck' > *kuwam*, **thelng* 'tongue' > *tiyalng*, **me/ok* 'sore' > *moyok*, **ngo/urrk* 'rib' > *ngorrok* 'rib part', **nguk* 'guts' > *nguwaq*

**po-Ø* 'hit-PP' > *pu-wa*, **wa-ny* 'follow-PP' > *wawi-ny*, **me-Ø* 'get-PP' > *mi-ya*, **me-n-iny* 'become-PI' > *miya-n-iny*, **me-n* 'become-NP' > *miya-n-a* 'become-FUT', **Ne-ng-iny* 'cook-PI' > *niya-nginy*, **Ne-ng* 'cook-NP' > *niya-ng-a-ra* 'cook-FUT'

nga 'hear' > *ngawa*

This vowel breaking process appears to have been motivated by two phonological preferences: the avoidance of monosyllabic word forms, and the avoidance of mid vowels. Consequently, monosyllabic words with a mid vowel were most likely to be affected by this process. Monosyllabic forms involving the high vowels or the low vowel were not generally affected. Neither were polysyllabic forms generally affected.

4.7 Warray

Deletion of Liquids in coda positions

Warray shows a general pattern of deletion of liquids in coda positions. The tap /rr/ and the laterals /l/ and /rl/ show slightly different deletion patterns. The tap is deleted on a more extensive scale.

**Vrr > e/_C, #*

**parrparr-* 'to shake' > *pepe-*, **pemarrk* 'dew' > *pimek*, **calarr* 'centipede' > *cale*, **tharr* 'thigh' > *-ce*, **curerrk* 'bowerbird' > *cuyek*, **karnamarr* 'black cockatoo' > *kurneme*, **karlarr* 'dillybag' > *karle*, **karrk* 'spider web' > *kek*, **ken/rnorr* 'mucus' > *kine*, **-kerrng(e)* 'new' > *-keng*, **-me/irrk* 'chest' > *-mek*, **ngarrk* 'I, me' > *ngek*, **rerr* 'camp' > *rle*, **warlarrk-* 'to wash' > *wurlek-*, **warlppurr* 'pubic tassle' > *warlppe*, **wetperr* 'yam sp.' > *witpe*, **wurrk* 'fire' > *wek*

Exceptions

**cirrk* 'woomera' > *cirrk*, **cirrnga-* 'to sneeze' > *cirrnga-*, **corrng-* 'to stretch' > *cung-*, **ngat/rterr* 'fishing line' > *ngiterr*, **yawarr-* 'to rustle' > *yawarr-*

This change has two components. One component involves an assimilation of the non-coronal vowels to a following [+coronal] /rr/ in coda position, thereby producing /e/ (ie /a, o, u/ > /e/). The second component is deletion of /rr/ in coda position. The development of **corrng-* 'to stretch' > *cung-* is irregular. It shows the second component, but not the first (the /u/ vowel reflects vowel raising — C following). The deletion of coda /rr/ is paralleled by a more limited deletion of the laterals in coda position.

*Lateral > *Ø/_C*]syll

**peremelk* 'shoulder blade' > *-pimek*, **pilkpilk* 'galah' > *pekpek*, **kul(p)pam* 'lots' > *kupam*, **-camkalk* 'jaw' > *-camk/ngak*, **conpolk* 'rotten' > *conpok*, **Lampalk* 'sugar glider' > *rlambak*, **morlk-* 'secretly' > *mok-*, **-walk* 'little' > *-wak*, **welkmo* 'firestick' > *wekmu*, **yilk* > *-yik* 'alive'

Elimination of /r/

The apical approximant /r/ shows a highly irregular pattern of development. As in Bininj Gun-wok (§4.1), this pattern appears to reflect a drift towards the elimination of /r/ in coda positions and between identical vowels.

**r > Ø*

**peremelk* 'shoulder blade' > *-pimek*, **purq-* 'to swell' > *puq-*, **Tiqtiri(ny)-* 'to itch' > *rtiti-*, **-karackarac* 'clean' > *-kackac*, **werq-* 'to vomit' > *weq-*

**r > y*

**-Tor* 'heart' > *-toy*, **curerrk* 'bowerbird' > *cuyek*

**r > l/rl*

parang* 'cheeky' > *pulang*, **pura-* 'to make' > *pula-*, **Tum-mira* 'tears' > *rtum-mila*, ?mork* 'grub, fly' > *ngukmurlk* 'blowfly' [?*nguk* 'guts, faeces' + **mork*], ?**wor* 'urine' > *wurl*

Preservation of /r/

**puran* 'boomerang > *puran*, **Tark* 'white' > *rturk*, **ngar* 'hair' > *-ngar* 'fur, body hair', **ngerq-* 'to breathe' > *nge/irq-*, **-ngoro* 'ankle' > *-nguru*

Vowel raising and fronting

Warray shows a complicated set of vowel raisings.

**a > e*

**-pa* 'collective' > *-pa/-pe*, **-Tak* 'pelvis' > *-rtek* 'anus, bottom'

**a > i*

**-kanam* 'ear' > *-kanim*, **-thala* 'mouth' > *-cili*, **wak* 'water > *wik*

**a > u*

**parang* 'cheeky' > *pulang*, **-Tark* 'white' > *-turk*, **karnamarr* 'black cockatoo' > *kurneme*, **-Langga* 'billabong' > *-lungga*, **-mak* 'good' > *-muk*, **marluk-* 'to wave (of water)' > *murluk-*, **-marnak* 'upper arm' > *-murnak* 'shoulder', **ngani* 'language' > *ngo/uni*, **warlarrk-* 'to wash' > *wurlek-*

**e(y) > i*

**pemarrk* 'dew' > *pimek*, **peremelk* 'shoulder blade' > *-pimek*, **Terreng-* 'to attach to' > *rtirring* 'to thread', **ke-* 'directional prefix' > *ke-/ki-*, **ke(k)ka* 'asleep' > *kika*, **ken/rnorr* 'mucus' > *kine*, **-kokmele* 'cheek' > *-kukmili*, **cateytey* 'grasshopper' > *cattiti*, **cenycok* 'milkwood' > *cinycuk*, **merlemerle* 'butterfly' > *mirlimirli*, **merlmerlmi* 'pimple stick' > *mirlmirlqmi*, **merre* 'north' > *merri*, **ngat/rterr* 'hook' > *ngiterr*, **ngec-* 'to ask' > *ngic-*, **ngek* 'night' > *ngikba*, **ngerq-* 'to breathe' > *ngirq-*, **-ngey* 'name' > *-nyi*, **welek-* 'to swallow' > *wilik-*

Exceptions

peremelk* 'shoulder blade' > *-pimek*, **Tettet* 'parrot' > *rtenten*, **kel* 'married' > *kel*, **-cen* 'tongue' > *-cen*, **-cerring* 'one' > *-cerriny*,merre* 'north' > *merri*, **ngerq-* 'to breathe' > *ngerq-*, **-retmV* 'tooth' > *-letma*, **werq-* 'to vomit' > *weq-*, **yerrel* 'armlets' > *yerrel*

**o(w) > u*

pokko* 'spear' > *pukku*, **pol* 'trouble' > *pul*, **Tolom-pu-* 'to cover' > *rtulum-pu-*, **Tolq-* > *rtulq-* 'to burst', **-kamo* 'tough' > *-kamu*, **karnpowk* 'tree snake' > *karnpuk*, **-kokmele* 'cheek' > *-kukmili*, **-korlo* 'back, flank' > *-kurlu*, **kottowkottowk* pigeon -> *kuttukkuttuk*, **kowarrang* 'echidna' > *kuwarrang*, **-camo* 'belongings of the dead' > *-camu*, **-camorrwu* 'ritual guardian' > *-camurru*, **cenycok* 'milkwood' > *cinycuk*, **cokong* 'aunt' > *cukung*, **cokpiny* 'carpet snake' > *cukpiny*, **cololo-* 'to flow' > *cululu-*, **-corlok* 'deep' > *-curluk*, **thom-pu-* 'to extinguish' > *cum-pu-*, **corrng-* 'to stretch' > *cung-*, **-mo* 'bone' > *-mu*, **moc-* 'to mix' > *muc-*, **-morlo* 'hip' > *-murlu*, ?mork* 'grub, fly' > *ngukmurlk* 'blowfly', **norn* 'water rat' > *nurn*, **ngol* 'cloud' > *ngul*, **-ngoro* 'ankle' > *-nguru*, **welkmo* 'firestick' > *wekmu*, **wocal* 'black plum' > *wucal*, **-won* 'female' > *-wun*, **wonga* 'to leave' > *wunga*, **?wor* 'urine' > *wurl*, **yawok* 'yam sp.' > *yawuk*, **yoc-* 'to go a long way' > *yuc-*, **yowok* 'bandicoot' > *yuk*

Exceptions

**pornorrong* 'brolga' > *pornorrong*, **por(q)-* 'to snore' > *porq-*, **poyq-* > *poyq-* 'to tell', **-Tor* 'heart' > *-toy*, **Torriya* 'rock wallaby' > *rtorriya*, **kortrtol* 'owl sp.' > *kortrtol*, **koy(ng)* 'soup' > *koy(ng)*, **cakot* 'kangaroo rat' > *ca/okot*, **conpolk* 'rotten' > *conpok*, **conggo* 'bee sp.' > *conggo*, **-colang* 'ripe' > *-colong*, **co(wo)c* 'scorpion' > *coc*, **morlk-* 'secretly' > *mok-*, **mot-* 'to be quiet' > *mot-*

None of the raisings are regular, though the two mid vowels are much more consistently affected than /a/. The raisings are favoured, but not controlled, by the presence of an adjacent [+high] consonant (the retroflexes, palatals and velars). There is evidence which suggests that the irregularities are to be understood in terms of the raisings being an active process. The clearest evidence for this comes from the following 'correspondences' between Gaagudju and Warray involving personal names.

(76) *marneyurluku* (Gaagudju) *wartirti* (Gaagudju)
marniyurluku (Warray) *wurtirti* (Warray)

These two personal names are in origin incontrovertibly Gaagudju. They refer in the first instance to Gaagudju people whose major contacts with Warray people were from the mid 1920s onwards. The name *Wurtirti* was bestowed on a Warray person by the original Gaagudju holder of that name in approximately 1930. The /e/ > /i/ and /a/ > /u/ correspondences between the Gaagudju originals and their Warray correspondents provide fairly conclusive evidence that the raising was still active when Warray had a major role in daily life in the 1930s.

The exact respects in which this process was active require some further consideration. With my consultants, it did not extend to idiolectal variation in the form of lexemes. There are lexemes which show a variation between raised and non-raised forms synchronically in Warray: e.g. *ngerq- ~ ngirq-* 'to breathe' and *melwe ~ milwe* 'place name'. However, in most cases a particular consultant would use only one or the other of the variants. The dialectal variations existing within Warray at contact are not now recoverable, and so it is not possible to assign the variants a dialectal status. Nevertheless my consultants normally regarded one of the variants as being theirs, and the other as being associated with other Warray speakers.

It is possible that this state of affairs results from a reduction in idiolectal variation following from the fact that Warray is not an actively spoken language. When it was actively spoken, it may have been possible to observe the change in progress within the lexicons of individual speakers. Alternatively it is possible that the process should be considered from a somewhat different angle. Koch (pers. comm.) reports that in some cases people are aware of correspondences between languages and will operate them synchronically, at least within certain lexical domains. For example, it is known that the Kaytetye and Arrernte adopted the subsection system in the course of the 20th century. Nevertheless the Kaytetye and Arrernte subsection names show the expected historical correspondences involving initial dropping. As such it appears that in some cases speakers are aware of what their language's correspondent to a form from another language should be, and may nativise a borrowing to that norm. This may be relevant to the raising process in Warray, particularly to forms such as those in (76).

In addition to the raising shifts, there are also a few forms which show a fronting among the high vowels.

**u > i*

**puq-*'to blow' > *piq-*, **kuk* 'body, raw' > *kik* 'raw (only)', **-luk* 'locative' > *-lik*

**kuluk-* > *kuluk* 'to be heavy-eyed', **culuk-* 'to spill' > *culuk-*, **Lumbuk* 'bird sp.' > *rlumbuk*, **marluk-* 'to wave (of water)' > *murluk-*, **mululuk* 'initiand' > *mululuk*, **nguk* 'guts' > *nguk*

There appear to be two relevant factors in this fronting. Firstly, /u/ is followed by /k/ or /q/, suggesting that the change has a dissimilatory motivation, given that /u/, /k/ and /q/ are all [+grave]. Secondly all the forms are monosyllabic. The relevance of this factor remains to be elucidated. Neither of the factors are determining factors. It is not certain that this fronting should be integrated with the raising into some kind of unified vowel shift process. Its correlates are rather different from the correlates of the raising processes.

Appendix: Proto Gunwinyguan preliminary cognate list

Note that where the evidence is insufficient to choose between the reconstruction of **c* and **th* — which happens in cases where the only attestation is in languages which have merged both laminal phonemes as /c/ — the reconstructed phoneme is represented as **C*, to be read as 'attested as /c/ in all modern languages that retain it, but logically compatible with descent from either **th* or **c* owing to the lack of attestation in languages that have not merged the two series'. Such forms are alphabetised after **c*. Similarly, where the attestation is insufficient to distinguish between reconstructed **T* and **th*, I note the reconstructed form as **T(h)*. These forms are alphabetised after **th*.

Monosyllabic verbs reconstructable for Proto Gunwinyguan are not included on this list — see Alpher, Evans and Harvey (this volume) for the roots and inflected forms.

Many of the forms included below may, on the basis of their distribution, turn out to be loans between or into Gunwinyguan languages; since the argumentation is often complex I have in most cases refrained from making judgments and merely furnish the data for the use of other scholars. Inclusion here, with a *, means simply that this would be the reconstructed form if they end up being assessed as inherited vocabulary. Forms in other non-Gunwinyguan languages of the region are noted where known, but words are included on this list only if they are attested in at least one Gunwinyguan language.

(1) **ca* 'conjunction' : BGW *ca*, D *ca*

(2) **caca ~ yacca* 'grevillea pteridifolia' : D *yacca*, Ja *yacca*, W *caca*

(3) **ca(p)pul-* 'to smoke' (*tr*) : D *cappul-*, Ja *cappul-*, M *capul-*, Uw *capul-*, W *capul-* (Wagiman *tapulp ~ tappul*, Wardaman *capulma*)

(4) **cacak* 'palm sp.' : D *cacak*, Ja *cacak*, Ngal *cacak*, Ngan *cacak*, R *cacak* (Ritharrngu *caacak*)

(5) **cak* 'ant sp.' : Ja *cak*, BGW *cak*, Ngan *caq*, Nu *yaak*

(6) **cakkaq* 'yamstick' : Ngal *cakkaq*, Ngan *cakkaq*, R *cakka*

(7) **cakku* 'left hand' : BGW *-cakku*, M *cakuyaku*, Ngal *-(pala)-cakku*, Nu *palacaku* (Kayardild *thaku*, Umpila *thaku*, Wagiman *-caku*) [The Nunggubuyu form is probably a borrowing — see §3.4]

(8) **cakorlk* 'gudgeon sp.' : Ja *caworlk*, BGW *cakolk*

(9) **calamarti(ny)* 'tree-dwelling plant sp.' : M *calamari* 'mistletoe', BGW *calamarti* 'tree orchid' (Kamu, Wagiman *calamariny* 'tree orchid')

(10) **calarr* 'centipede' : Ja *calarr*, BGW *calarr*, W *cale* (Kungarakany *celerr*, Kamu *cererr*, Jaminjung *calarrin*, Matngele *cererr*, Nungali *-yalarru*, Wagiman *telerrin*, Wardaman *calarrin*)

(11) **calma* 'yam sp.' : Ngan *calma*, R *calma* (Ritharrngu, Warndarrang *calma*)

(12) **calng* 'spinifex' : M *calk*, Ngal *calng*, Ngan *calng*, Nu *yaalng* (Ritharrngu *caalng*)

(13) **camarlak* 'clapsticks' : D *camarlak*, Ja *camarlak*, W *camarlak* (Wagiman, Warndarrang *camarlak*)

(14) **camarlarra* 'constellation' : Ngal *camarlarra*, Ngan *camarlarra*

(15) **-camo* 'belongings of the dead' : Ja *-camo*, BGW *-camo*, W *-camu*

(16) **campakkaq* 'billycan' : Ngal *campakkaq*, Ngan *campakkaq* (Ritharrngu *campakkaq*)

(17) **camparl* 'ground oven' : Ngan *camparl*, R *camparl* (Ritharrngu *camparl*)

(18) **campVn/rn* 'death adder' : D *campan*, Ja *campan*, Ngal *camporn*

(19) **camunpuk* 'small kangaroo' : Ja *camunpuk*, BGW *camunpuk* 'white-chested kangaroo', W *camunpuk*

(20) **canak* 'yam sp.' : D *canvk*, Ja *canak*, BGW *canek*, W *canak*

(21) **canay* 'goanna sp.' : D *canay*, BGW *canay*, Ngal *canayq* 'goanna (generic)'

(22) **-cangarak* : Ja *-cangarak* 'throat', BGW *-cangarak* 'chin', R *cangarak* 'jaw'

(23) **cangay* 'slingshot' : M *cangay* (Wardaman *cangay*) [Though probably a loan from English 'shanghai']

(24) **cang-ka-* 'to hunt' : D *cang-ka-*, Ja *cang-ka-*, M *cang-ka-*, BGW *cang-ka-*, Ngal *cang-ka-*

(25) **-cangki* : Ja *-cangki* 'plural/collective', W *-cangki* 'really (intensifier)'

(26) **cangkurr* 'frill-necked lizard' : Ngan *cangkurr*, R *cangkurr* (Ritharrngu *cangkurr*)

(27) **cantac* 'palm sp.' : D *cantac*, BGW *cantac*

(28) **cap-* 'to lie/sit knees up' : D *part-capcap-*, Ja *part-capcap-*, R *mo-capcap-*, W *part-cap-*

(29) **cap-* 'to stab' : D *cap-*, Ja *cap-*,W *cap-*

(30) **capec* 'wattle sp.' : BGW *capic*, R *capec*

(31) **cappo* 'quoll' : D *cappo*, BGW *cappo*

(32) **cappurtenyqrteny* 'long-horned grasshopper' : Ngal *cappurtenyqrteny*, Ngan *cappurtenyqrteny*, R *cappurtenyqrtenyq*

(33) **capur* 'WMB' : D *capurl*, Ngan *capur*, R *capur* (Ritharrngu *caapur*)

(34) **carang* 'dreaming' : Ja *carang*, BGW *-cang*, R *carng*

(35) **carla* 'crayfish' : D *carla*, Ngal *carla*, Ngan *carla*

(36) **carlung* 'king brown' : Ja *carlung*, BGW *carlung*, W *carlung/m*

(37) **carnarr* : Ja *carna* 'bubbles, froth', M *carnurr* 'saliva', BGW *carna* 'beer, foam, saliva' (*?*Kungarakany *conerr* 'saliva, beer', Wardaman *carnurrin*)

(38) **carnarran* 'jabiru' : D *carnarran*, Ja *carnarran*, Ngal *carnarran* (Wardaman *carnarran 'pelican'*)

(39) **carnpalcarnpal* 'whimbrel' : M *carnpalcarnpal* (Wardaman *carnpalcarnpal*)

(40) **carnqpa* 'banyon' : Ngan *carnqpa*, R *carnqpa* (Ritharrngu *carnqpa*)

(41) **carrapuypuy* 'floater insect' : Ja *carrawuywuy*, BGW *carrapuypuy*

(42) **carrkka* 'water goanna' : D *carrkka*, Ngan *carrkkaq*, R *carrkka* (Ritharrngu *carrkkaq*)

(43) **carrmarn/ny* 'tree sp.' : D *carrmarn*, Ja *carrmarn*, BGW *carrmany*

(44) **carrurtrtu* 'female agile wallaby' : Ngal *carrurtrtu*, Ngan *carrurtrtu*, Nu *yarrurtu*, R *carrurtrtu* (Ritharrngu *carutu*)

(45) **carta* 'to rub firesticks' : Ngal *carti*, Ngan *carta* (Ritharrngu *carta*)

(46) **cartuk* 'red apple' : Ja *caruk*, BGW *-cartuk*

(47) **cateytey* 'grasshopper' : D *catete* 'big grasshopper' *catteyrnttey* 'small grasshopper', Ja *catete*, BGW *cateyrnteyrn*, W *cattiti*

(48) **-cat-mo* 'thigh bone (cf. *-mo bone)' : D *cat-mo*, Ja *-cat-mo*, BGW *-cat-mo* 'marrow in kangaroo thigh bone', W *-cat-mu*

(49) **catngerecngerec* 'green tree frog' : BGW *catngerecngerec*, D *catngerecngerec*, Ja *catngerecngerec*

(50) **catperlqperl* 'bird sp.' : D *catperlqperlq*, Ja *catperlqperl*, BGW *catpelqpel*

(51) **catti* 'frog' : BGW *catti*, Ja *catti*

(52) **ca-wa-* 'to ask' : D *ca-wa-*, Ja *ca-wa-*, BGW *ca-wa-*

(53) **cawok* 'koel' : Ja *cowok*, BGW *cawok*, W *cok* ~ *cowok*(*mi*) (Wardaman *cuwokpan*)

(54) **cawqcaw* 'waterlily stem' : Ngal *cawqcawq*, Ngan *cawqcaw* (Warndarrang *cawcaw*)

(55) **cawurrk* 'beard' : Ja *-cawurrk*, BGW *-cawurrk*, *?*W *kicewek* [The *cewek* portion of the W form would be a regular correspondance for the BGW and Ja forms. However there is no obvious source for the initial ki portion.]

(56) **ce* 'nose' : D *ce*, Ngal *ce*, Nu *yi* 'face'

(57) **celerr* 'stone axe' : Ngal *celerr*, Ngan *celerr*

(58) **celq-* 'to drip' : Ja *celq-*, BGW *celq-*

(59) **-cen* 'tongue' : D *cen*, Ja *-cen*, BGW *-cen*, W *-cen*

(60) **cenkererr* 'grevillea sp.' : Ja *cenkererr*, BGW *cenkererr*, R *cenkirerr*

(61) **centel* 'green shoot' : D *centel*, Ja *-centel*, R *centel*

(62) **ceny* 'fish' : D *ceny*, BGW *ceny*, Ngal *ceny*, Ngan *ceny*, R *ceny*

(63) **cenycok* 'milkwood' : Ja *cenycok*, BGW *-cenycok*, W *cinycuk* (*?*Gaagudju *caanyca*), poss. also Nu *yanycuk* 'tree sp. poss erythrina'

(64) **cerr* 'small dillybag' : D *cerr*, Ja *cerr*, BGW *cerrq*, R *cerrq*

(65) **cerrekko* 'goanna sp.' : D *cerrekko*, Ja *cerrekko*, BGW *cerrekko*

(66) **-cerring* 'one' : Ja *-cirriny*, Uw *-cerring*, W *-cerriny*

(67) **cerrpe* 'pandanus mat' : D *cerrpe*, Ja *cerrpe*

(68) **cet* 'ground oven' : Ngal *cet*, Ngan *cet*

(69) **cetparl* 'yam sp.' : D *cetparl*, BGW *cetparl*

(70) **cetperte* 'rifle fish' : D *cetperte*, R *cetperte*

(71) **ceyec* 'chewing plug' : D *ceyec*, Ja *ceyec*, BGW *ceyec*

(72) **ceyowk* 'wet season' : D *ceyowk*, Ja *ceyowk*, BGW *-cewk*

(73) **ceyqmi* 'bird sp.' : D *ceyqmi*, Ja *ceyqmi*

(74) **ci(c)cuk* 'wallaby sp.' : Ngal *cicuk*, Ngan *ciccuk*

(75) **cic-* 'to fart' : BGW *cic-*, W *cic-*

(76) **ciccan* 'dreaming' : Ngal *ciccan*, Ngan *ciccan* (Marra *ncican*)

(77) **cikirricikirric* 'willy wagtail' : BGW *cikirriccikirric*, W *cikirricikirric* (Kungarakany *cikirricikirric*, Wagiman *cikirricca*)

(78) **cikka* 'breast' : D *cikka*, BGW *cikka*

(79) **cili(ci)lq-* 'to jingle' : BGW *cilicilq-*, W *cililq-*

(80) **cilikuypi* 'whistleduck' : D *cilikuypi*, R *cilikuypi*

(81) **cilin* 'crest' : Ja *-cilin* (Wardaman *cilin*)

(82) **ciliwirn* 'Capparis umbonata' : BGW *ciliwirn*, Ngal *ciliwirn*, R *cilvwvrn*

(83) **cilk- to rain'* : *?*Ja *cilk-* 'to spill out, to fall down', M *cilk* 'to rain', Ngal *cilk-* 'to rain' (Alawa *cil* 'to rain', Wardaman *yi-cilk* 'big wet') [Is Ja form related?]

(84) **cim* 'to come' : Uw *tim*, W *cim* (Kungarakany *cim*, Wagiman *ti*)

(85) **cimcim* 'pandanus acquaticus' : D *cimcim*, Ja *cimcim*, BGW *-cimcim*, R *cimcim*

(86) **cimiq* 'leech' : Ngal *cimiq*, Ngan *cimiq* (Ritharrngu *cimiq*)

(87) **cimirnrti* 'knife' : Ja *cimirnrti*, BGW *ciminti*, Ngan *cimirnrtiq* 'spike of dugong spear', Nu *cimirnrti* 'spike of dugong spear', R *cimirnrtiq* 'spike of fish spear', (Jaminjung *cimirnrti* 'knife', Ritharrngu *cimirnrtiq* 'spike of dugong spear', Wagiman *cimirnrtirr* 'knife', Wardaman *cimirnrti* 'knife', Warndarrang *cimirnrti* 'spike of dugong spear')[3]

(88) **cimirnulk* 'snake sp.' : D *cimirnulk*, Ja *cimirnulk*

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3 The lack of lenition to /y/ in Nu suggests this is a loanword, in that language and probably in others as well.

(89) **-cing* 'stomach' : Ja *-cing*, BGW *-cing*, Ngal *-cing*

(90) **ciniminy* 'bat sp.' : W *ciniminy* (Kamu, Jaminjung, Matngele, Wagiman *ciniminy*)

(91) **cinma* 'shark' : M *cinma*, Ngal *cinma*, Ngan *cinma*, Nu *wucinma* (Ritharrngu, Warndarrang *cinma*)

(92) **cipak* 'fish' : Ja *capak-* 'to fish', Ngan *cipuk-thu-* 'to fish', W *cipak* (Ritharrngu *cipuk-u-* 'to fish')

(93) **cirnirrin/ny* 'mistletoe' : D *cirnirrin*, Ja *cirnirrin*, BGW *cirnirriny*, R *cirnirrin* (Wardaman *cintirrin*)

(94) **cirr* 'grass sp.' : D *cirr*, Ja *cirr*, poss. Nu *yirr* 'leaves, foliage'

(95) **cirri* 'love magic' : W *cirri* (Wardaman *cirri*)

(96) **cirrirnrti(t)* 'quail' : D *cirrirtrtiq*, Ja *cirrirtrti*, M *cirrirnrtit*, BGW *cirnrti(q)*

(97) **cirrirtiti* 'bird sp.' : BGW *cirrirtirti*, Ngal *cirrirtiti*, Ngan *cirrirtirti* Nu *cirrirtirti*, (Ritharrngu *cirrirtirti*)

(98) **cirrk* 'woomera type' : Ja *cirrk* 'woomera hook', M *cirrk* 'small woomera', BGW *cirrk* 'disposable woomera', W *cirrk* 'woomera' (Kungarakany *cirrk* 'fighting stick', Wardaman *cirrk* 'small woomera')

(99) **cirrk-ka-* 'to push' : Ja *cirrk-ka-*, BGW *cirrk-ka-*

(100) **cirrkkiny* 'native mouse' : D *cirrkkiny*, Ngal *cirrkkiny*, Nu *yirrkkiny* 'brush-tailed possum'

(101) **cirrnga-* 'to sneeze' : W *cirrnga-* (Kamu *cirrnga*, Jaminjung *cirrngayp*, Wagiman *cirrngaw*)

(102) **cirrpili* 'bony bream' : D *cirrpvlv*, Ngan *cirrpili* (Ritharrngu *cirrpili*)

(103) **cirrpiyuk* 'whistleduck' : Ja *cirrwiyuk*, M *cirrpiyuk*, BGW *currpiyuk*, Ngan *cirripiyuk*, W *cirrpiyuk* (Kungarakany *cirrpiyuk*, Marra *cirrpiyu*, Ritharrngu, Warndarrang *cirrpiyuk*)

(104) **cit/rt-* 'to steal' : D *cirt-*, BGW *cit/rt-*

(105) **co(wo)c* 'scorpion' : Ja *cowoc*, BGW *coc*, W *coc*

(106) **cokong* 'aunt' : D *congok*, Ja *cowong* 'wBC', *congwok* 'aunt' (*?*cokong + kuk* 'body'), R *congok* 'mother-in-law', Uw *cukung*, W *cukung*

(107) **cokparl* 'hornet' : Ja *cokparl*, BGW *cakparl*

(108) **cokpiny* 'carpet snake' : BGW *cokpiny*, Uw *cokpiny*, W *cukpiny*

(109) **colam-* : D *colam-* 'to sneak up on', Ja *colam-* 'to hide (tr)', BGW *colamaq* 'a hide'

(110) **colang* 'ripe, cooked' : Ja *colang*, M *curlak*, BGW *corleng*, Nu *lharang*, W *colong* [this has an anomalous correspondence set: the initial Nu *lh* suggests **th*, but the initial BGW *c* suggests **c*]

(111) **colkko* 'ground' : Ngal *colkko*, Ngan *colkko*, R *colkko* (Ritharrngu *culka*)

(112) **congq-* 'to kiss' : *?*R *corngq-* W *cungq* (Wardaman *congma*)

(113) **corlk* 'to pass by' : Ngal *corlk*, Ngan *corlk*, Nu *carlk*, *?*R *corl-* (Ritharrngu *curlk*). This correspondence set is anomalous, through the presence of initial *c* in Nu: from **c* we would expect Nu *y*, and from **th* we would expect *lh*.

(114) **corlok* 'deep' : Ja *corlok ~ kayorlok* 'steep', BGW *corlok* 'deep, deeply cut or pitted', W *-curluk* 'deep', poss. Nu *yurluk* 'thin, narrow'.

(115) **corq-* 'to cough' : D *corqcor-*, Ja *corq-*, BGW *coq-*

(116) **corq-* 'to shift' : D *corq-*, Ngan *corq-*

(117) **corrkkon* 'cockrag' : D *corrkkon* , Ja *corrkkon* (Wardaman *corrkon*)

(118) **corrng-* 'to straighten, to stretch' : D *corrng-*, Ja *corrng-*, M *carrng-*, BGW *corrng-*, Ngal *corrng-*, R *corrng-*, W *cung-* (Wagiman *corrng-*)

(119) **corrq-* 'to defecate' : Ngal *corrq-*, Ngan *corrq-*, R *corrq-*

(120) **cortowq* 'to become daylight' : Ngal *cortowq*, Ngan *cortowq*, R *cortoq-* (Ritharrngu *cartawq*)
(121) **cotet* 'nail-tailed wallaby' : D *cotet*, Ja *cotet*, BGW *cotet*
(122) **cotmo(ng)* 'tree sp.' : D *cotmo*, Ja *cotmo*, BGW *-cotmo(ng)*, R *cotmo*
(123) **cottoy-* 'to limp' : W *cottoy-* (Kamu *cuttuy*, Wagiman *cottoyq*)
(124) **cowk-* 'to cross' : D *cowk-*, BGW *cowk-*
(125) **cowq-mi-ku* 'afternoon' : Uw *coq-mi-ko*, W *cowq-mi-wu*
(126) **coy* 'give' : M *coy* (Wardaman *coy*)
(127) **cucca* 'water goanna' : Ja *cucca* (Jaminjung, Wardaman *cutca*)
(128) **cukerre* 'female black wallaby' : Ja *cuwerre*, BGW *cukerre*, R *cukerre*
(129) **cul/rrq-* 'to descend' : D *currq-* 'to fall', Ja *currq-*, W *culq-*
(130) **cularr* 'goanna sp.' : Ja *cularr*, BGW *cularr*
(131) **culng* 'dust' : D *culngo*, Ja *caculng*, BGW *-culng*, R *turlng* [the R form in this set is anomalous, since **c* (justified by the D and BGW forms) should descend as *c* in R]
(132) **culpu* 'ashes' : D *culpu*, *?*Ja *culwu* 'tobacco chewing plug', M *culpu*
(133) **culukkurn* 'tree sp.' : D *culukkurn*, Ja *culukkurn*, BGW *culukkurn*
(134) **cuntu* 'stone' : Ngan *cuntu*, R *cuntu*
(135) **cuppiq* 'shrub sp.' : D *cuppi*, Ngal *cuppiq*, Ngan *cuppiq*
(136) **cuq-* 'to swim' : D *cuq-*, BGW *cuq-*
(137) **curam* 'aggressor' : Ja *curamq-* 'to be aggressive', M *curam*, Ngan *curam* (Ritharrngu *curamu*)
(138) **curerrk* 'bowerbird' : D *curerrk*, Ja *curerrk*, M *curerrkmin*, Ngal *curerrk*, Ngan *curerrq*, W *cuyek* (Kungarakany *cororrkme*, Ritharrngu *curirrq*, Warndarrang *curirr*)
(139) **curk* 'kingfisher sp.' : D *curk*, BGW *cuk*
(140) **curlum* 'whirlwind' : Ja *-curlum*, BGW *-curlum*, W *culum* (Matngele *cörröm*, Umbugarla *rtaculum*)
(141) **curluq* 'lancewood' : Ngal *curluq*, Ngan *curluq*, R *curluq* (Ritharrngu *curluq*)
(142) **curn* 'black-headed python' : D *curn*, Ngal *curnq*, W *cun*, Nu *yu:rn* 'young black-headed python'
(143) **curnrtupolq* 'rock wallaby' : Ngal *curnrtupolq*, Ngan *curnrtupurlqcurnrtupurl*
(144) **curr-* 'to pour' : D *currq-* 'to water oneself', Ngal *curr-*, Ngan *curr-*
(145) **currang* 'taipan' : Ja *currang*, BGW *currang*
(146) **curri* 'parrot sp.' : D *curriq*, Ja *curri*, BGW *curriq*, R *curriq*
(147) **currpu* 'to go down' : M *currpu* 'to fall (of a waterfall)' (Wardaman *currpu*)
(148) **currul* : BGW *currul* 'tawny frogmouth', W *cörröl* 'owl sp.'
(149) **-cut* 'nape of neck' : D *cut*, Ja *-cut*, BGW *-cut*
(150) **cuyq-* 'to send' : Ngal *cuyq-*, Ngan *cuyq-*, R *cuyq-* (Ritharrngu *cuyq-*)
(151) **Cacac* 'uncle' : Uw *cacac*, W *cacac*
(152) **Cakot* 'kangaroo rat' : W *ca/okot* (Kungarakany *cokot*)
(153) **Calala* 'new leaves' : Ja *calala-wu-* 'to put new leaves on' (M *calala*)
(154) **Calmarr* 'fishtail' : Ja *calmarr*, M *calmarr*
(155) **Calq-* 'to flame up' : Ja *calq-*, W *calq-*
(156) **-Camkalk* 'jaw' : Ja *-camkalk*, W *-camk/ngak*
(157) **Camku* : Ja *camku* 'perhaps', M *camku* 'for nothing'

(158) **Camolk* 'nothing' : Ja *camolk*, Ngal *camolk*

(159) **-Camorrwu* 'ritual guardian' : Ja *-camorrwu*, W *-camurru*

(160) **Campurl* 'yam sp.' : Ja *campul* (Kamu *campurl*, Matngele *campur*)

(161) **Camuny* 'MF' : Ja *camuny* 'MF', ?Ngal *caminy* 'spouse', W *camuny* 'MF, FM' (Kungarakany *ciminy* 'MF, FF', Wardaman *camuny* 'MF', *camunyman* 'of the MF country') [The Kungarakany form would appear to show assimilation of the vowels to the neighbouring palatals]

(162) **Cangarrk-* : Ja *cangarrk-* 'to shout in Gunabibi', M *cangak-* 'to take young men to ceremony ground'

(163) **Cangkay* 'expert hunter' : Ja *cangkay*, M *cangkay*

(164) **Cangq-* 'to eat noisily' : W *cangq-* (Kamu *cangq*, Wardaman *cangcacangma* 'to slurp')

(165) **Canypalk* 'saltwater' : Uw *canypalk*, W *canypalk*

(166) **Capiny* : Ja *cawiny* 'foreskin', M *capiny* 'uncircumcised man'

(167) **Cappurru* 'sacred' : Ja *cappurru*, Ngal *cappurru*

(168) **Carlarla-* : Ja *carlarla-* 'to wriggle, to slither', Ngal *carlarla-* 'to crawl'

(169) **Carrang* 'flood' : Ja *carrang* (Wardaman *carrang*)

(170) **Carric* 'charcoal' : Ja *carric*, Ngal *carric*

(171) **Cartpa* 'firstborn' : Ja *cartpa*, Ngal *cartpa* (M *cartpa*)

(172) **Cartuk* 'bird (generic)' : Uw *cartuk*, W *cartuk*

(173) **Cawarl* 'tawny frogmouth' : Ja *cawarl*, M *cawarl*

(174) **Cawayakwayak* 'bird sp.' : Ja *cawayakwayak*, M *cawayakwayak*, W *cawayawayak*

(175) **Cawelk* : Ja *cawelk* 'burned out grass', Ngal *cawelk* 'grass sp.'

(176) **Cay(q)-* 'to refuse' : M *cay-*, Ja *cayqmi-* (Wardaman *cayma*)

(177) **Ceccerr* : Ja *ceccerr* 'big [avoidance term]', W *ceccerr* 'lots'

(178) **Ciningkirric* 'willy wagtail' : Ja *ciningkirric*, M *ciningkirric* (Kamu *cintikirric*)

(179) **Cololo-* 'to flow/run down (of liquids)' : Ngal *cololo-*, W *cululu-*, ?Ngan *cululuq-* 'to pour, to drink quickly', (?Ritharrngu *cululuq-* 'to pour water')

(180) **Congko* 'bee sp.' : Ja *congko*, M *congko*, R *congko*, W *congko*

(181) **Conpolk* 'rotten' : W *conpok* (Kamu *conpolk*)

(182) **Corlq-* 'to kick' : Ja *corlq-*, R *corlq-* 'to hit out at with arm or leg' (Wardaman *corlma*)

(183) **Corlwana* 'female kangaroo' : Ja *corlwana* (M *corlwana*)

(184) **Corne* 'tree sp.' : Ja *corne*, Ngal *corne*

(185) **Culq-* 'to fish' : W *culq-* (Kamu *cul*)

(186) **Culuk-* 'to spill' : W *culuk-* (Kungarakany *culuk-*, ?Kamu *culuk-* 'to put into water')

(187) **Cumpay* 'riverbank' : Ja *-cumpay*, M *cumpay*

(188) **Cumurrk-* : Ja *cumurrk-* 'to attack on the sly', M *cumurrk-* 'to kill by sorcery'

(189) **Curnkun* 'single girl' : Ja *cungkun*, Ngal *curnkun*

(190) **Cut-* : Ja - 'to hit/poke with a digging stick', M *cut-* 'to poke ground with a digging stick

(191) **CVp-* 'to drip' : Ja *cep-*, W *cup-*

(192) **kak(kak* 'parallel grandparent' : D *kakkak* 'MM', Ja *kakak* 'MM', M *kakak* 'MM', BGW *kakkak* 'parallel grandparent, focally MM', Ngan *kokkok* 'MM', R *kakkak* 'parallel grandparent, focally MM', ?W *kakkak* 'close non-marriageable cross cousin' (Marra *kaka*, Warndarrang *kaka*)

(193) **kace/it* 'knife' : Ngal *kacet*, Ngan *kacit* (Ritharrngu *kacit*)

(194) **kakkali* 'spouse' : Ja *kakkali*, BGW *kakkali*

(195) **kakku* 'properly' : D *kakku*, R *kakku*
(196) **kakung* 'FF' : Ja *kawung* 'wDC', W *kaku* (Jaminjung, Wardaman *kakung*)
(197) **kal/rlkkal/rlk* 'lizard sp.' : D *karlkkarlk*, R *kalkkalk*
(198) **kal/rrkal/rr* 'slowly' : Ja *kalalqmi*, Uw *karrkaqkarrka*, W *kalkal*
(199) **kala* 'hill' : Ngal *kala*, Ngan *kala*
(200) **kalakkala* 'bird sp.' : D *kalakkala*, Ja *kalakkala*
(201) **kalal* 'clear ground' : Ja *kalal*, M *kalal*, Ngal *kalal*, W *kolal*
(202) **kalangarnrtaq* 'plant sp.' : Ngal *kalangarnrtaq*, Ngan *kalangarnrtaq*, Nu *wukalangarnrta* (Warndarrang *kalangarnrta*)
(203) **kalawan* 'goanna' : D *kalwan*, Ja *kalwan*, BGW *kalawan*
(204) **kalic* 'other' : Ngan *kalic*, R *kalic*
(205) **kali-ma-* 'to pick up' : Ngal *kali-ma-*, Ngan *kali-ma-*
(206) **kalk* 'dangerous person, evil' : D *rakalk* , Ngal *kalk*, Ja *kalk*
(207) **kalngorkngork* 'brains' : Ngal *kalngorkngork*, Ngan *kolngorkngork*
(208) **-kalpam* 'calf' : Ja *-kalwam*, BGW *-kalpam*
(209) **kalq* 'to climb' : M *kalqma* (Wagiman *kalq*, Wardaman *kal*)
(210) **kamakkun* 'properly' : Ngal *kamakkun*, Ngan *kamakkunq*
(211) **-kamo* 'hard, tough' : Ja *-kamo*, W *-kamu*
(212) **kampuk* 'crab' : D *kampuk*, Ja *kampuk*, BGW *kampuk*
(213) **kamunycu* 'temporal' : Ngal *kaminycikko* 'all the time', Ngan *kamunycuq* 'these days'
(214) **-kanam* 'ear' : D *kanvm*, BGW *-kanem*, Ngal *-kanam*, Ngan *-kanam*, R *kanam*, W *-kanim* (Warndarrang *wanam*)
(215) **kanci* 'jabiru' : D *kanci*, BGW *kanci*, Ngan *kanci*, Nu *anci*, R *kanci* (Ritharrngu *kanci*, Warndarrang *karrinci*)
(216) **kanga* 'belly' : D *kangv*, *?*BGW *-kange* 'inner bark of tree, inside, emotion', R *kanga*
(217) **kanta* 'leg' : *?*M *kanta* 'rump, pelvis', Ngal *karnrta*, Ngan *kanta*, R *kanta*
(218) **kany* 'meat' : D *kany*, BGW *kany*
(219) **kanyaq* 'small' : Ngal *kanyaq*, Ngan *-kanyaq* 'diminutive' (Ritharrngu *-k/nganyang*, Warndarrang *-kanya*)
(220) **kapkap-* 'to guzzle' : Ja *kapkap-*, M *kapkap-*
(221) **kappal/rr* 'blacksoil plain' : Ja *kapparr* 'blacksoil', BGW *kappal* 'plain' (Giimbiyu *appal* 'plain')
(222) **kapparnrtaq* 'white mud' : Ngal *kapparnrtaq*, Ngan *kapparnrtaq*
(223) **kappay* 'ironwood' : D *kappay* 'ironwood wax', M *kapay* 'ironwood wax', BGW *kappay* 'hard, ironwood wax' (Gaagudju *kaapay* 'ironwood')
(224) **-kappul* 'paucal' : Ngal *-kappul*, Ngan *-kappul*
(225) **kappurk* 'dry' : Ngal *kappurk*, Ngan *kappurk*
(226) **kappurla* 'blind' : D *kappurla*, Ja *kappurla*, BGW *kappurla*, Ngal *kappurla*, Ngan *kappurlaq*, R *kappurla*
(227) **kare* 'might be' : D *kare*, Ja *kare*, BGW *kare*
(228) **karlampa* 'headband' : Ja *karlampa*, BGW *karlampa*, W *karlampa(ng)* (Gaagudju *karlampa*, Kamu *karlampang*, Kungarakany *karlampa*, Jaminjung *karlampang*, Larrikiya *karlampa*, Matngele *karampang*, Wardaman *karlampang*)
(229) **karlang* 'shoulder' : D *karlang*, BGW *karlang*
(230) **karlarlppa* 'bony bream' : BGW *karlarlppa*, W *karlarlppa*

(231) **karlarr* 'dilly bag' : M *karlarr*, W *karle* (Kamu *karlarr*, Jaminjung *karlarr* 'large fishing net', Matngele *kararr*, Wagiman *karlarr*, Wardaman *karlarr*)

(232) **karlerrq* 'Long Tom fish' : D *karlerrq*, BGW *karlerrq*

(233) **karlikarliq* 'boomerang' : Ngal *karlikarliq*, Ngan *karlikarliq*, R *karlikarliq* (*?*Jaminjung *kali*, Ritharrngu *karlikarliq*)

(234) **karlkke* 'tadpole' : D *kalkke*, BGW *karlkke* (Mawng *karlki*)

(235) **karlngka/iny* 'freshwater mangrove' : D *karlngkiny*, BGW *karlngany*

(236) **karlppu* : D *karlppu* 'wattle sp.', BGW *karlppu* 'woomera type'

(237) **karnamarr* 'black cockatoo' : D *karnamarr*, BGW *karnamarr*, W *kurneme*

(238) **karnampal* 'black flying fox' : W *karnappal* (Kamu *karnampal*)

(239) **karnanganyca* 'emu' : Ngan *karnanganyca* 'large feathers on emu' (Nungali *karnanganyca* 'emu', Ritharrngu *karnanganyca* 'large feathers on emu', Wagiman *karnanganyca-n* 'emu')

(240) **karncoy* 'mother in law' : Ja *karncoy*, M *karnci*, W *karncoy* (Ngaliwurru *karnci* 'father-in-law')

(241) **karnma* 'big bandicoot' : Ja *karnma*, BGW *karnma*

(242) **karnpany* 'leech sp.' : W *karnpany* (Kungarakany *karnpany*, Matngele *karnpany*)

(243) **karnpany* 'palm sp.' : Ja *karnpany*, M *karnpac*, BGW *-karnpany*, W *karnpany* (Wardaman *karnpany*)

(244) **karnpirr* 'Acacia sp.' : D *karnpirr*, Ja *karnpirr*, BGW *karnpirr*

(245) **karnpowk* 'tree snake' : D *karnpowq*, BGW *karnpowk*, W *karnpuk*

(246) **karnrtalppurru* 'female kangaroo' : Ja *karnrtalppurru*, BGW *karnrtalppurru*, Ngal *karnrtalppurru*, Ngan *karnrtalppurru*, Nu *arnrtaalpurru*, R *karnrtalppurru* (Ritharrngu *karnrtalppurru*, Marra *karnrtalpurru*, Wardaman *karnrtalwu*, Warndarrang *karnrtalpurru*)

(247) **karnrtan-mo* 'spine' : D *karnrtan-mo*, Ja *-karnrtan-mo*

(248) **karnrtayq* 'female kangaroo' : D *karnrtayq*, BGW *karnrtayq*

(249) **karnrteken* 'dingo' : D *karnrtvkvn*, BGW *karnrteken*, R *karnrtvkvn*

(250) **-karra* 'collective' : D *karra-*, Ja *-karra*, Ngal *-karra*, Ngan *-karra*, Nu *-(w)arra*

(251) **-karra* 'leg, shin' : D *karr*, Ja *-karra*, BGW *-karre*, W *-karra* (*?*Kamu *kerrerre* 'shin', *?* Matngele *kerrerre*)

(252) **karra* 'top' : Ngal *karra*, R *karra*

(253) **karrak* 'black cockatoo' : D *karrak*, Ja *karrak*

(254) **karrakkarrak* 'diver duck' : Ngal *karrakkarrak*, Ngan *karrakkarrak*

(255) **karral/rla* 'spoonbill' : D *karrarla*, BGW *karrala* 'ibis', *kurrarla* 'spoonbill', Ngan *karrala*, Nu *karraalak* 'ibis' (Ritharrngu *karrala* 'spoonbill')

(256) **karrang* 'mother' : Ja *karrang*, BGW *karrang*, (Kungarakany *karrang*, Wagiman *karreng*)

(257) **karrany-ci-* 'to grow' : M *karrany-ci-* (Wardaman *karrany-ci-*)

(258) **karrarnrtalk* 'spinifex sp.' : D *karrarnrtalk*, BGW *karrarnrtalk*, *?*Ngan *ngarrarnrtalk* 'grass sp.'

(259) **karrartarta* 'breastplate' : Ja *karrartarta*, Ngal *karrartarta*, W *karrartarta* (Kungarakany *karrartarta*, Marra *karratata*, Wagiman, Wardaman *karrartarta*)

(260) **karri(ny)* 'west' : D *karri*, Ja *karri*, BGW *karrikat* 'west', *karriken* 'westerners', Ngal *kerriny*, R *karriny*

(261) **karricintin* 'bucket' : M *karricintin* (Wardaman *karricintin*)

(262) **karrk* 'spider web' : D *karrk*, BGW *karrk*, Ngan *karrq*, R *karrq*, W *kek* (*?*Kamu *karr*, *?*Matngele *karr*, Ritharrngu *kaarrq* 'spider')

(263) **karrkkal/rra* 'top' : *?*BGW *karrkat*, Ngal *karrkkarra*, Ngan *karrkkala*, *?*Nu *arrwar* (*?*Ritharrngu *karrwar*)

(264) **karrkkany* 'goshawk' : D *karrkkany*, Ja *karrkkany*, BGW *karrkkany*, Ngan *karrkkanyq*, Nu *karrkac*, (Marra *karrkany*, Ritharrngu *karrkanyq*, Wagiman *karrkkany*, Warndarrang *karrkany*)

(265) **karrng* 'insect sp.' : Ja *karrng* 'bee (generic)', BGW *karrngcalarrk* 'large green ant', *karrngkile(q)* 'small green ant'

(266) **karrpil/rlk/q* 'yam sp.' : D *karrpvrlk*, BGW *karrpilq*

(267) **kart-* 'to bog' : Ngal *kart-*, Ngan *kart-*, Nu *warttha* (Ritharrngu *kart-*)

(268) **karta* 'maybe' : D *kartv*, R *karta*

(269) **kartak* : D *kartak* 'uncle', Ngan *kartak* 'spouse'

(270) **kartap* 'spider' : Ja *karap*, M *karap*, BGW *kartap* (Wardaman *karap*)

(271) **karterre* 'bee sp.' : Ja *karterre*, BGW *karterre*

(272) **kartukartu* 'women (avoidance style) : ?D *kvrtvkvrt* 'woman (ordinary)', Ja *kartukartu*, BGW *kartukartu*

(273) **kartul* 'hot ashes' : Uw *kartul*, W *kartul*

(274) **kaw/yq-* 'to call out' : Ja *kayq-*, BGW *kayq-*, Ngal *kawq-*, Ngan *kawq-*, Nu *kaw* 'hey', R *kawq-*, W *kayq-* (Larrikiya *kay*, Kamu *kay*, Wagiman *kayq*, Wardaman *kay*)

(275) **kawirVq* 'dingo' : Ngal *kewereq*, Ngan *kawirq*

(276) **kawk* 'nankeen night heron' : D *kawk*, *?*Ja *marrkawkmi*, BGW *kawk*, W *kawk* (Kamu *kunkawk*)

(277) **kaworlk* 'friar bird' : D *kaworlk*, BGW *kaworlk*

(278) **kayapam* 'tree sp.' : BGW *kayapam* 'Gardenia megasperma', Ngal *kayapam* 'Capparis umbonata'

(279) **kaykka(y)* 'uncle' : Ngal *kaykka*, Ngan *kaykkay* (Ritharrngu *kaykkay*)

(280) **kaykku* 'temporal' : Ngal *kaykku* 'a short while ago', Ngan *kaykku* 'last year', R *keku* 'some time ago', *?*W *kakku(y)* 'later'

(281) **kaykkupurrq* 'daytime' : Ngal *kaykkupurrq* 'early to midday', Ngan *kaykupurrq* 'daytime', R *kekkupurrq* 'daytime'

(282) **kaywal* 'turtle sp.' : Ngan *kaywal*, R *kaywal*

(283) **ke-* 'directional' : Ja *ke-*, W *ke-/ki-*

(284) **kel* 'married' : Ja *kel*, Ngal *kel*, W *kel*

(285) **keli* : Ja *keli* 'two people related as cross cousins', BGW *kali* 'married', W *-kerrikeli* 'married couple'

(286) **kelk* 'bank' : D *kelk* 'slope', Ja *-kelk* 'bank, cliff', Ngal *-kelk*, Ngan *kelk*

(287) **ken* 'oops' : D *kenq*, Ja *ken*, Ngal *ken*, R *ken*

(288) **ken/rnorr* 'mucus' : Ja *kernorr*, Uw *kinerr*, W *kine*

(289) **kengporlq* 'lizard sp.' : D *kengporlq*, BGW *kengporlq*

(290) **kenykeny* 'pulse' : D *palkenykeny*, Ja *palkenykeny*, BGW *kenykeny*

(291) **kenykeny* 'skink sp.' : Ja *kenykeny*, M *kinyqkiny* (Wardaman *kenykeny*)

(292) **-kereckerec* 'clean' : Ja *-kereckerec*, W *-kackac* (*of water*)

(293) **kernalk* 'ibis' : D *kernalk*, BGW *kernalk*, Ngal *kernalk* (Umbugarla *kinalk*)

(294) **-kerrng(e)* 'new' : Ja *-kerrng*, BGW *-kerrnge*, Ngal *kerrnge* 'alive', W *-keng*

(295) **ketlengq-* 'to cough' : W *ketlengq-* (Kamu *ketlengq-*)

(296) **kew* 'child' : Ngal *ke* 'man's child', Ngan *kew* 'son, daughter', R *ke* 'mSiC'

(297) **kicak* : Ja *kiyak* 'something', W *kicakkicak* 'everything' (Wagiman *kiyakkiyak* 'everything')
(298) **kicalkkin* 'limestone' : Ja *kiyalkkin* (Wagiman *kicalkkin*, Wardaman *kiyalkin*)
(299) **kikkik* 'small bird sp.' : BGW *kikkik*, D *kikkik*, Ja *kikkik*, R *kikkik*, W *kikkikmi*
(300) **kilac* 'mirror' : W *kilac* (Kamu *kilac*)
(301) **kilirri* 'yellow ochre' : D *kilirri*, Ja *kilirri*
(302) **kilwirrkilwirr* 'plant sp.' : D *kilwirrkilwirr*, Ja *kilwirrkilwirr*
(303) **kimaci/un* 'snake sp.' : M *kimacun* (Wardaman *kimacin*)
(304) **kinerr* 'mucus' : Uw *kinerr*, W *kine*
(305) **kinya-* 'to cook' : D *kinya-*, BGW *kinye-* (Wardaman *kinye-*)
(306) **kirnqkirn* 'catfish sp.' : D *kirnqkirnq*, Ja *kirnqkirn*, R *kvrnqkvrnq*
(307) **kitik-* 'to tickle' : Ja *kirik-*, *?*R *kicik-* (Wardaman *kitikpa*)
(308) **ko/uny* 'kangaroo [generic]' : BGW *kuny*, Ngal *kony*, R *kuweny*
(309) **koc* 'head' : D *koc*, BGW *koc*
(310) **kocowkkocowk* 'bird sp.' : Ja *kocowkkocowk* (Wardaman *kotcokkotcok*)
(311) **-kokmele* 'cheek' : Ja *-kokmele*, W *-kukmili*
(312) **-kol* 'nest' : Ja *-kol*, Ngan *-kol*
(313) **kolk-* 'water' : D *kolk-*, BGW *kolq-*
(314) **kolongorrq* 'yellow ochre' : Ngal *kolongorrq*, Ngan *kolongorrq*, R *kolongorrq* (Ritharrngu *kalangarrq*)
(315) **kolototok ~ kol/rlo(t)tok* 'dove' : D *kolototok*, Ja *kolototok*, M *kolotok*, Ngal *kolototok*, Ngan *korlottok*, W *kolototok* (Kungarakany *kuluttuttuk*, Ritharrngu *kurlutuk*, Wagiman *korlototok*, Wardaman *kolorok*)
(316) **kolowuruk* 'initiate' : D *kolowuruk*, Ja *kolowuruk*
(317) **kompoq* 'fish sp.' : D *kompoq*, BGW *kompoq*, R *kompoq*
(318) **komporloq* 'tree sp.' : D *komporloq*, BGW *komporloq*
(319) **komtuc* 'adolescent boy' : Ja *komtuc*, BGW *komtuc*, R *komrtuc*
(320) **kon* : D *kon* 'fin', R *kon* 'barb, hook'
(321) **kongkong* 'plant sp.' : Ja *kongkong* 'tree sp.', BGW *-kongkong* 'bush potato'
(322) **koq* 'eye' : D *koq-tap-* 'to close eye', Ngan *-koq*, R *kuwaq*
(323) **kor-* : Ngal *kor-* 'to load', Ngan *kor-* 'to put in(side)'
(324) **kor-* 'to be sick' : Ngal *kor-*, Ngan *kor-* (Ritharrngu *kur-*)
(325) **korl* 'plant part' : D *korl* 'root part', Ja *-korl* 'lily part'
(326) **korlangrlang* 'tree sp.' : D *korlangrlang*, BGW *korlangrlang*
(327) **-korlo* 'back' : Ja *-korlo*, M *-karla*, W *-kurlu* 'flank'
(328) **korlp-* : Ja *korlp-* 'to hook a spear up to a woomera' (Wardaman *korlp* 'to aim')
(329) **korlq* 'Planchonia careya' : D *korlq*, BGW *korlq*
(330) **korn* 'testicles' : D *korn* 'woman's genitalia', Ja *kornrtapu* 'testicles', BGW *korn/kornpen* 'crotch, testicles'
(331) **kornopolo* 'wallaby sp.' : D *kornopolo*, BGW *kornopolo*
(332) **korre* : D *korre* 'before', BGW *korre* 'quickly'
(333) **-korrk* 'clothes' : D *korrq*, Ja *-korrk*, BGW *-korrk*
(334) **korrmo* 'pandanus husk' : D *korrmo*, BGW *korrmo*
(335) **korroko* 'before' : D *korroko*, BGW *korroko*

(336) **korrowkkorrow* 'kookaburra' : D *korrokkorrow*, M *korrokorromin*, R *korrowkkorrow* (Wardaman *korrkorrman*)
(337) **korrowol* 'wrong way marriage' : W *korrowol* (Kamu *karrawal*)
(338) **korrq-* : Ja *korrq-* 'to bog', M *karrq-* 'to jump in water' [meanings?]
(339) **korrwan* 'white plum' : D *korrwan*, BGW *korrwan*
(340) **kortrtol* 'owl sp.' : D *kortrtol*, Ja *kortrtol*, BGW *kortrtol*, W *kortrtol*
(341) **kot* 'paperbark' : BGW *kot*, Ngal *kot*
(342) **kotpe* 'yam sp.' : D *kotpe*, BGW *kotpe*
(343) **kottowkkottowk* 'pigeon' : Ja *kottowkkottowk*, BGW *kottowkkotkowk*, W *kuttukkuttuk* (Kungarakany *kuttukkuttuk*)
(344) **kowarrang* 'echidna' : Ja *kowarrang*, BGW *ko/uwarrang*, W *kuwarrang*
(345) **kowk* : D *kowk* 'humpy', Ngal *kowk* 'paperbark humpy', Ngan *kowk* 'bark of stringybark'
(346) **-koy(ng)* 'soup' : Ja *-koy*, Ngan *koc*, W *-koy(ng)* (Kamu *-kuy*)
(347) **koyow* 'freshwater crocodile' : Ngal *koyo*, Ngan *koyow*
(348) **kuccung* 'large lily sp.' : D *kuccung*, Ja *kuccung*, Ngal *kuccung* (Wardaman *kucung* 'lily seed pod')
(349) **kuk* 'body, raw' : Ja *kuk-*, BGW *kuk*, Ngal *kuq* 'raw (only)', R *kuq*, W *-kik* 'raw (only)'
(350) **kul(p)pam* 'many' : Ja *kulppam* 'three, several', W *-kupam* 'lots'
(351) **kul/rrqwarr-* 'to shoot' : Ngal *kulqwarr-* , Ngan *kurrqwarr-*
(352) **kulppiny* 'anthill' : D *kulppiny*, BGW *kurlppiny*, R *kulppiny*
(353) **kulppiny* 'emu' : M *kulpiny*, Uw *kulppiny* (Kungarakany *kulppiny*)
(354) **kulpungkulpung* 'frog sp.' : D *kulpungkulpung*, Ja *kulpungkulpung*
(355) **kuluk-* : Ja *kuluk-* 'to be heavy-eyed', M *kuluk-* 'to bow head', W *kuluk-* 'to be heavy-eyed'
(356) **kululungq-* 'to growl (of the belly)' : W *kululungq-* (Kamu *kululungq-*)
(357) **kulurr-* : Ja *kulurr-* 'to mourn', M *kulurr-* 'to be sorry for'
(358) **kuluyampi* : D *kuluyampi* 'boat, float', Ja *kuluyampi* 'pandanus mat', BGW *kuli/uyampi* 'paperbark raft', W *kuliyampa* 'paperbark raft'
(359) **kuluyqkuluy* 'tawny frogmouth' : D *kuluyqkuluy*, BGW *kuluyqkuluy*, Ngan *kuluykkuluy* (Ritharrngu *kuluykkuluy*)
(360) **kumpic* 'tree sp.' : Ja *kumpic*, D *kumpic*
(361) **-kun* 'hand' : Ja *-kun-ngerr/-kun-wirrwa* 'right hand', *-kun-wirrung* 'left hand' [lit hand-different], BGW *-kun* 'right hand', W *-kun-muk* 'right hand' [lit hand-good]
(362) **kunca* 'ground' : W *kunca-* (Kungarakany *kuncu*, Nungali *-wunyca*, Wagiman *kunca-n*, Wardaman *koncon*)
(363) **kung* 'honey' : D *kung*, BGW *kung*, Ngan *kung*
(364) **kungar(l)ak* 'blue tongue' : M *kungarlak* (Wagiman *kungarak*)
(365) **kungurru* 'tree sp.' : D *kungurru*, R *kungurruq*
(366) **-kunkun* 'heavy' : D *kunkun*, Ja *-kunkun*, R *kunkun*, W *-kunkun*
(367) **kuntal* 'peacemaker' : D *kuntul* , Ja *kuntal*, M *kunturl*, Ngal *kuntal* (?Wardaman *kuntul* 'to be sorry for')
(368) **kunumeleng* 'storm season' : D *kunumeleng*, BGW *kunumeleng*
(369) **kunungu* 'black-headed python' : D *kunungu*, Ngan *kunungu* (Ritharrngu *kunungu*)
(370) **-kuny* 'soul' : Ja *-kuny*, W *-kuny*
(371) **kurl* 'cloud' : Ja *kurl*, BGW *kurl*
(372) **kurlac* 'reed' : D *kurlac*, BGW *kurlac*

(373) **kurlak* 'skin' : D *kulaq*, Ngal *-kurlaq*, BGW *-kurlaq*, Ngan *kurlaq*, Nu *makurlak, warrikurlak* 'bark' R *kurlaq* (Ritharrngu *kurlaq*)

(374) **kurlkurl* 'paperbark sp.' : D *kurlkurlq*, BGW *kurlkurl*

(375) **kurlpa* 'blood' : D *kurlpa*, BGW *kurlpa*

(376) **kurnmuk* 'night' : Ngal *kurnmuk*, Ngan *kurnmuk*

(377) **kurnrtalq* 'black plum' : D *kurnrtalq*, BGW *kurnrtalq*

(378) **kurnrtirnrtirn* 'ibis sp.' : M *kurnrtirnrtirn* (Wardaman *kurnrtirnrtirn*)

(379) **kurnrtun/rn* 'Flacourtia territorialis' : BGW *kurnrtun*, W *kurnrturn*

(380) **kurnung* 'cloud' : Ngal *kurnung*, Ngan *kurnung*, R *kurnung* (Ritharrngu *kurnung*)

(381) **kurr(k)kurr* 'tendon' : Ngan *kurrkkurr*, R *kurrkurr* (Ritharrngu *kurrkkurr*)

(382) **kurr/rat/rtpa* 'bush string' : Ja *kuratpa*, BGW *kurrartpa*

(383) **kurrac* 'blood' : D *kurrac*, Ja *-kurrac*, M *kurracnyin*, BGW *-kurrac* (*avoidance*), Ngal *kurrac*, W *kurrac*

(384) **kurri* 'blue-tongue lizard' : Ja *kurri*, BGW *kurriq* (Umbugarla *kurri*)

(385) **kurrmul/rlu* 'blue-tongue lizard' : D *kurrmulu*, Ngal *kurrmurluq*, Ngan *kurrmurluq*, R *kurrmurluq* (Ritharrngu *kurrmurluq*)

(386) **kurrnga* 'moon' : D *kurrnga*, Ngal *kurrnga*, Ngan *kurrnga*, R *kurrnga*

(387) **kurrngi/urn/ny* 'sweat' : D *kurrngurn*, Ja *kurrngirn*, BGW *kurrnginy*

(388) **kurrucartu* 'olive python' : D *kurrucartu*, Ngal *kurrucartu*, R *kurrucartu*

(389) **kurruk* 'mussell' : D *kurruk*, BGW *kurruk*

(390) **kurrumara* 'corpse' : D *kurrmvra*, Ja *kurrumara*

(391) **-kurrung* 'arm' : D *kurru* 'shoulder, upper arm', Ja *-kurru*, W *-kurrung*

(392) **kurruppirl* 'turtle sp.' : D *kurrppurl*, Ngal *kurruppirl*, Ngan *kurruppirl*, Nu *kurrupirl*, R *kurruppirl* (Ritharrngu *kurrupirl*)

(393) **kurtic-* 'to go around' : W *kurtic-* (Kamu *kuric-*)

(394) **kurtuk* 'black' : Ja *kurukkuruk*, BGW *kurtuk*

(395) **kut-* 'to get up' : W *kut-* (Nu*ngali*, Wardaman *kut*)

(396) **kut(u)kut(u)-* 'to copulate' : M *kutkut-* (Wardaman *kutuma-*)

(397) **kut/rtang(yi)* 'clever fellow' : Ja *kurang*, BGW *kurtangyi*, *?*Ngal *kolong*, W *kutang(yi)*, (Wardaman *kurang*, *?*Warndarrang *kulung*) [The Ja, BGW, W and Wardaman forms correspond. The relationship of the Ngal and Warndarrang forms is uncertain]

(398) **kutt/rtrtu* 'Terminalia grandiflora' : *?*BGW *kurtrtu* 'Calophyllum sp., Strychnos lucida', Ngan *kuttuq*, Nu *wutu* (Ritharrngu *kuttuq*)

(399) **kuttapirlq* 'bird sp.' : Ngal *kuttapirlq*, Ngan *kuttapirlq*, R *kuttappvrlq*

(400) **kuwarlu(/rlu)* 'curlew' : Ngal *kuwerlu*, Ngan *kuwarlurlu*, Nu *wuwarlurlu* (Ritharrngu *kuwarlurlu*)

(401) **-kuyang* 'tall' : Ja *-kuyang*, BGW *-kuyeng*, R *-kiyangkiyang*

(402) **kuypuk* 'Banksia dentata' : D *kuypuk*, BGW *kuypuk*

(403) **kVl/rlV(r)wit/rtwit/rt* 'bird sp.' : D, *kuluwirtwirt*, BGW *karlarrwitwit;* Ja *pamkuluwirtwirt*, R *puluwvrtwvrt*, W *karli/kurlawirtwirt* (Limilngan *kurlawirtwirt*)

(404) **-kVm* 'back of neck' : D *kom*, Ja *-kam*, BGW *-kom*, R *kuwam*, W *-kum*

(405) **kVngV* 'saltwater crocodile' : D *kenga*, Ja *kenge*, BGW *kinga*

(406) **kVrrang* 'two' : Ja *catkorrang*, W *kirrang-qlul*

(407) **kVrrV* 'stone' : *?*D *kerri* 'stone oven',*?*Uw *karriyi*, W *kirri* (Kungarakany *kerre*, Wagiman *karra-*)

(408) **kVrVwVk* 'kookaburra' : R *korrowkkorrow*, W *karrawok* (Kungarakany, Malak-Malak *kurruwak*)
(409) **L/rong* : Ngal *rong* 'chin, face', Ngan *rlong* 'head'
(410) **Laki-* 'to throw' : Ja *rlayi-*, W *rlaki-*
(411) **Lakkayen* 'initiated young man' : Ja *rlakkayen*, BGW *lakkayin*
(412) **Lak-pu* 'to split' : Ngal *rlak-pu*, Ngan *rlak-pu* (Ritharrngu *rlak-pu*)
(413) **Lal* 'to chase away' : M *lal* (Wardaman *lalma*)
(414) **Lal/rlaq-* 'to tear' : Ja *rlarlaq-*, W *rlalaq-*
(415) **Lama* 'shovel spear' : Ja *rlama*, BGW *lama*
(416) **Lampak* : Ngal *rlampak* 'turtle shell', Ngan *rlampak* 'tin can'
(417) **Lampalk* 'sugar glider' : D *rlampalk*, Ja *rlampalk*, BGW *lampalk*, W *rlampak*, *?*R *lampalk* 'bat sp.'
(418) **Langa* 'hand' : D *langv* 'paw', BGW *-langa* [Gun-gurrng register], R *langv*
(419) **-Langka* 'billabong' : D *rlangka*, Ja *-rlangka*, Ngal *-rlangka*, W *-rlungka* (Wagiman *langkarnin*, Wardaman *rlangkanin*)
(420) **Langkalangka* 'butterfly' : W *rlangkalangka* (Matngele *langkalangka*)
(421) **Langkalangka* 'pearlshell' : W *rlangkalangka* (Kamu *langkalangka*)
(422) **Langkurna(ng)* 'goose' : Ngal *rlangkurnang*, Ngan *rlangkurna* (Ritharrngu *rlangkurna*, Warndarrang *rlangkurna*)
(423) **Lany* 'tree' : Ja *rlany-*, Uw *rlany*
(424) **Laplap* 'bird sp.' : D *laplap*, BGW *laplap*
(425) **Larla-* 'to dry out' : Ja *rlarla-*, M *rlarla-*
(426) **Larrppo/un/rniny* 'wallaby sp.' : Ja *rlarrpponiny*, Ngal *rlarrppurniny*, Ngan *rlarrppurniny*
(427) **Larrq-* 'to stop' : W *larrq-* (Kamu *tac-larr-*)
(428) **Larrwa* 'bamboo pipe' : D *larrwa*, BGW *larrwa*, Ngan *rlarrwa*, Nu *rlarruwa*, W *rlarrwa* (Kamu, Ritharrngu, Wagiman *larrwa*)
(429) **Law-* 'to bite' : BGW *law-*, Ja *rlaw-* (*avoidance*), BGW *law-*
(430) **Lawk* 'stone spear' : Ja *rlawk*, BGW *lawk*, W *rlawk*
(431) **Leklek* 'Opilia armentacea' : D *rleklek*, Ja *rleklek*, BGW *-leklek*
(432) **Lelec* 'to rustle' : D *rlerlec-*, Ja *rleleclelec-*, Ngal *rlelelec-*, R *rleyerlec-*
(433) **Leppal* 'spotted bream' : D *rleppal*, Ja *rleppal*, M *rlipal*, Ngal *rleppal*, Ngan *rleppal* (Ritharrngu *rlipal*)
(434) **Lerrelerre* 'shrub sp.' : D *rlerrelerre*, Ja *rlerrelerre*, BGW *lerrelerre*, Ngan *rlerrerlerreq*, Nu *wurlirrirlirri*, R *lerrelerre* (Ritharrngu *(ku)rlirrirlirri*, Warndarrang *rlirrirlirri*)
(435) **Lerrq-* 'to clap boomerangs' : BGW *lerrq-*, Ngal *rlerrqrlerr-pu-*, Ngan *rlerrqrlerr-* (Jaminjung *lerrplerrp*)
(436) **Lerrq-* 'to light a fire' : Ja *rlerrq-*, *?*M *rlirr* 'to burn too much'Ngal *rlerrq-*, R *rlerrq-*
(437) **Let-* : W *rlet-na-* 'to look after' (Wardaman *rletpa* 'to look at')
(438) **Letrlet* 'parrot' : Ngal *rletrlet*, Ngan *rletrlet*
(439) **Li* 'to fall'
(440) **Likpa* : M *likpa* 'to join up with, be company with someone' (Wardaman *likpa* 'whole lot')
(441) **Lirlqrlirl-* 'to ache' : *?*D *rlurlqrlurl-* 'to have a headache', Ja *rlirlqrlirl-*, Ngal *rlirlqrlirlq-* 'to have a headache', Ngan *rlirlqrlirlq-* 'to have a headache', R *rlirlqrlirl-*
(442) **Lirrapin* 'black cockatoo' : M *lirrawi* (Wagiman *lirrapin*, Wardaman *lirrawin*)
(443) **Lirrk* 'new moon' : D *rlirrk*, Ja *rlirrk-*, BGW *lirrk*

(444) **Lirrq-* 'to scratch' : D *lirrq-*, BGW *lirrq-*, W *rlirrq-*

(445) **Lit-pu-* 'to sew' : *?*D *marlit-pu-*, Ja *rlit-pu-*, M *rlit-pu-*, W *rlit-pu-* (Wagiman *rlit-pu-yan*, Wardaman *rlit-pu-*)

(446) **Liw* 'to swim' : M *liw* (Wardaman *liwma*)

(447) **Loklok* 'lizard sp.' : D *rloklok*, Ja *rloklok*, BGW *loklok*, Ngal *rloklok*, Ngan *rloklok* (Ritharrngu *rlaklak*)

(448) **Lopolopo* 'butcherbird' : W *rlopolopo* (Kungarakany *rlopolopo*, Kamu *lopo*, Wardaman *rloparlopa*)

(449) **Lork-* 'to be cold' : Ja *rlork-*, M *rlarrk-*

(450) **Lorrok* 'hollow' : D *lorrk*, Ja *-rlorroklorrok*, BGW *lorrk*

(451) **Lorrot-* 'to grind, to sharpen' : W *rl/rnorrot-* (Wardaman *rlorrotpa*)

(452) **Lorrq-* 'to sift' : W *lorrq-* (Kamu *lorrq-*)

(453) **Lowk/q-* 'to prise off' : D *rlowk-*, Ja *rlowk-*, M *rlowq-*

(454) **Loywa* 'red ochre' : Ja *rloywa*, W *rloywa*

(455) **Lumpuk* 'pigeon sp.' : D *rlumpuk*, Ja *rlumpuk*, BGW *lumpuk*, W *rlumpuk*

(456) **Lumq-* : D *rlumq-* 'to strip bark off', Ja *rlumq-* 'to split', Ngal *rlumq-* 'to strip bark off'

(457) **Lun* 'down, outside' : M *lun* (Wardaman *lun*)

(458) **Lurl-* 'to swell up' : Ja *rlurl-*, BGW *lurl-*

(459) **Lurra* 'behind' : Ja *rlurra*, *?*M *rlurr* 'to put behind', W *rlurra*

(460) **ma(p)pac* 'tobacco chewing plug' : BGW *mappac*, W *mapac* (Kamu *mapac*, Wardaman *mapac*)

(461) **ma(rt)rtawk* 'wild passionfruit' : D *calamartawk* , Ja *martawk*, BGW *carlamartawk*, W *martrtawk* ~ *martrtowk* (Matngele *mutukmutukma*, Wagiman *martawuk*, Wardaman *martawok*)

(462) **mac* 'swag' : D *mac*, BGW *mac*

(463) **mac* 'wind' : Ja *mac*, W *mac*

(464) **maccurn* 'black-headed python' : D *maccurn*, BGW *maccurn*

(465) **-mak* 'good' : Ja *-mak*, BGW *-mak*, Ngal *-maq*, Ngan *-maak*, R *-maq*, Uw *-mok*, W *-muk* (Kungarakany *-mek*)

(466) **mak* 'message stick' : Ja *mak*, M *mak*, BGW *mak*, R *mak*, W *mak* (Wagiman *mak*)

(467) **makkakkurr* 'pelican' : D *makkakkurr*, BGW *makkakkurr* (Gaagudju *makarrkurr*, Umbugarla *makarrkurr*)

(468) **makorlkorl* 'plant sp.' : D *makorlkorl*, Ja *makorlkorl*

(469) **mal/rlVp/wVrr(V)* 'cold weather' : Ja *malapparr*, Ngal *marluwurru*, Ngan *marloworro*, R *marlwurru* (Wardaman *malaparr*)

(470) **mal/rr-* 'poison' : Ja *marr-*, W *mal-*

(471) **mala-* 'group' : Ngal *mala-*, Ngan *mala-kalic*, R *mala*

(472) **malampippi* 'bat sp.' : D *malampippi*, BGW *malampippi*, R *malampippi*

(473) **malawirtiwirti* 'hawk sp.' : Ja *malawitiwiti*, Ngan *malwirtiwirti*, Nu *malwirtiwirti*, R *malawvrtvwvrtv* (Ritharrngu *malwirtiwirti*, Warndarrang *malawirtiwirti*)

(474) **malk* 'subsection' : D *malk*, Ngal *malk*, R *malk*

(475) **malk-* 'time' : Ngal *malk-*, Ngan *malk-*, *?*R *malk-* 'at random'

(476) **mal-ka-* 'to beget [father]' : Ngal *mal-ka-*, Ngan *mal-ka-* (Ritharrngu *malka-*)

(477) **-malmal* : Ja *-malmal* 'young person', W *-malmal* 'soft'

(478) **malmalmac* 'native tobacco' : W *malmalmuc* (Wardaman *malmalmac*)

(479) **mam* 'spirit' : Ja *mam*, BGW *mam*, W *mam* (Wagiman *mam-in*)

(480) **maminy-* 'to wrap' : Ja *maminy-*, *?*M *maminy* 'to roll up swag', Ngal *maminy-*

(481) **mampulpak* 'dreaming' : W *mamulpak* (Kungarakany *mappulpak*, Kamu *mamulpak*) [A homorganic nasal-stop cluster would seem the most likely explanation for the /m/ and /p/ reflexes.]

(482) **mamtak* 'Canthium lucidum' : Ja *mamtakmorakmo*, BGW *mamrtak*

(483) **mamurrng* 'ceremony' : Ja *mamurrng*, BGW *mamurrng*

(484) **man-* 'collective' : Ngal *man-*, Ngan *man-*

(485) **manappurn* 'echidna' : Ngal *manappurn*, Ngan *manappurn*

(486) **mancarr* 'leaf' : Ngan *mancarrq*, Nu *mancarr*, *?*R *mancarr* 'tree sp.' (Ritharrngu *mancarrq*)

(487) **manga* 'neck, throat' : Ngal *manga*, Ngan *manga*

(488) **mangal* 'woomera' : Ja *mangal*, R *mangal* (*?*Wagiman *mangkal-in*)

(489) **mangkang* 'female cross-cousin' : W *mangkang* (Kungarakany *mangkang*)

(490) **man-ka-* : BGW *man-ka-* 'to fall', W *man-ka-* 'to lose (intr)'

(491) **manki-manki* 'stingray barb' : D *manki-manki*, BGW *manki-manki*

(492) **many-* 'taste' : Ja *many-*, BGW *many-* 'taste' ~ *manymak* 'sweet', Ngal *many-*, Ngan *many-* ~ *manymak* 'good, satisfactory', *?*W *-maymak* 'sweet' [?**many-* + *-mak* 'good'] (Ritharrngu *many-*)

(493) **mapam* 'palm sp.' : Uw *mapam*, W *mapam* (Kamu *mapam*)

(494) **mapirling* 'wallaby sp.' : M *mapirling* (Wardaman *mapirling*)

(495) **marla* 'centipede' : D *marla*, BGW *marla*, Ngal *marla*, Ngan *marla*, Nu *marla* 'centipede, scorpion' (Ritharrngu *marla* 'scorpion')

(496) **marla* 'large intestine' : M *marla* (Wardaman *marla*)

(497) **marla* 'leaf' : D *marlaworr*, Ja *marlaworr*, BGW *marlaworr*, W *mala/-mara* (Kungarakany *mala*)

(498) **marlac* 'lizard sp.' : D *marlac*, BGW *marlac*

(499) **marlinyci* 'insect sp.' : D *marlinyci*, Ngan *marlinyci*

(500) **marluk-* 'to wave (of water)' : M *marluk-*, W *murluk-* (*?*Wagiman *merlungq*)

(501) **marluqmarlu* 'lame' : Ja *marlqmarlu*, M *marluqmarlu*, Ngal *marluqmarluq*

(502) **-marnak* ' arm' : Ja *-marnak* 'arm', R *marnak* ' arm', W *-murnak* 'shoulder'

(503) **marne-* 'benefactive' : D *marnv-*, BGW *marne-*

(504) **marniny-* 'to make' : Ngal *marniny-*, Ngan *marniny-*, *?* Nu *marntha-*

(505) **marn-pu-* 'to make' : D *marn-po-*, BGW *marn-pu-* (Wardaman *marn-pu-*)

(506) **marnpulu* 'pigeon sp.': M *marnpulu* (Wagiman *marnpulu*)

(507) **marnrtaliny* 'orphan' : W *marnrtaliny* (Kungarakany *marnrtaliny*, ?Larrakiya *mirnrtaling*)

(508) **marr-* 'comparative' : Ngal *marr-*, Ngan *marr-*

(509) **marr/ral* 'ghost' : Ja *maral*, M *marral*

(510) **marram* 'kite sp.' : BGW *marram*, Ja *marram*, M *marram*

(511) **marrampal* 'water goanna' : Uw *mayamparr*, W *mayampal* (Matngele *marrampar*, Ngaliwurru *mayamparl*)

(512) **marrampaq* 'wife-stealer' : Ngal *marrampaq*, Ngan *marrampaq*, R *marrampaq* (Ritharrngu *marrampaq*)

(513) **marrappi* 'palm sp.' : D *marrappi*, Ja *marrappi* 'Cycas media', BGW *marrappi*

(514) **marrappippi* 'headband' : Ja *marrappippi* (Wardaman *marrapipi*)

(515) **marri-* 'hunger' : Ja *marri-*, BGW *marri-*

(516) **-marriny* 'girl' : Ja *-marriny*, M *marric*, Ngal *-marriny*, W *-marriny* (Wagiman, Wardaman *marrinyin*)

(517) **marrk-* 'to believe' : Ja *ngani-marrk-*, BGW *marrk-*

(518) **marrngq-* 'to flash' : W *marrngq-* (Wagiman *marrngq*)

(519) **marrnguny* 'catfish sp.' : D *marrnguny*, BGW *marrnguny*

(520) **marrq-* 'to open' : Ja *marrq-*, BGW *marrq-*

(521) **marrqmarr-* 'to shake' : D *marr-*, Ngal *marrqmarr-*, Ngan *marrqma-*

(522) **marruny* 'palm sp.' : D *marruny*, BGW *marruny*

(523) **martawk* 'friar bird' : D *martawk*, Ja *marawk*, Ngal *martawq*, Ngan *martawk* (Ritharrngu *maartawk*, ?Wagiman *cartawk*)

(524) **martayin* 'ceremony' : D *martayin*, Ja *marayin*, BGW *martayin*, Ngan *martayin*, Nu *martayin*, R *martayin* (Gaagudju, Ritharrngu *martayin*)

(525) **martirt* 'hawk sp.' : M *martirt* (Wardaman *martirt*)

(526) **martmart-* 'to shine' : Ja *martmart-*, Ngal *martmart-*, W *martmart-*

(527) **martpa* 'eucalyptus sp.' : Ja *martpa*, BGW *martpa*, W *martpa* 'didgeridoo'

(528) **martpiny* 'barramundi' : Ja *martpiny* (Wardaman *martpiny*)

(529) **martu* 'paperbark/coolamon' : Ja *martu* 'deep coolamon', M *martu* 'deep coolamon', Ngal *martu* 'paperbark sp.' (Wardaman *martu* 'deep coolamon')

(530) **martukkal* 'barramundi' : Uw *martukkal*, W *martukkal*

(531) **martuq-* 'to flash (of lightening)' : Ja *martuq-*, BGW *martuqmartu-*

(532) **mat* : D *mat* 'heel', BGW *mat* 'ankle'

(533) **mawurrumpulk* 'plant sp.' : D *mawurrumpulk*, BGW *mawurrumpulk*

(534) **mawuya* 'poison' : Ja *mawuya*, M *mawuyin*, Ngan *mawuya*, W *mawuya* (?Kamu *manguyawa*, Matngele, Ngaliwurru, Wardaman *mawuya*)

(535) **may* 'food' : BGW *-me*, D *mey*, Ja *may*, Ngal *may*, R *me* (Wardaman *mayin*)

(536) **mayaq-* 'to get lost' : D *mayaq-* 'to forget', BGW *mayaq-*

(537) **mayk/q-* 'to flash (of lightening), to wink' : Ja *mayk-* ~ *maymayq-*, M *mayk-* 'to flash', BGW *mayq-*, Ngan *mayq-*, W *rtum-muyk-* 'to wink'

(538) **mayompol* 'Milky Way' : Ja *mayompol* (*also road*), BGW *mayompol*

(539) **-me/irrk* 'chest' : Ja *-mirrk*, BGW *-merrek* 'hollow of chest', *-merrq* 'base of sternum', Uw *-mirrk*, W *-mek* [*-merrk* in place name]

(540) **me/ok* 'sore' : Ja *-mek*, BGW *-mok*, Ngal *momok*, R *moyok*

(541) **mel/rleny* : Ja *merleny* 'spearpoint', M *miliny* 'nose'

(542) **mel/rlppe* 'female wallaby' : D *merlppe*, Ja *merlppe*, BGW *melppe*

(543) **melang* 'light' : Ja *wurrk-melang* 'flame, bushfire', M *miling*, W *mela/eng* (Wardaman *merleng*)

(544) **mele* 'bed' : D *mele*, Ja *mele*

(545) **melpe* 'mud' : D *melpe*, Ja *melwe*

(546) **men* 'mind' : Ja *men*, Ngal *men*

(547) **men-* 'to watch' : Ja *menmen-*, M *men-*

(548) **meng* 'to be a big expanse' : M *meng* (Wardaman *mengmengma*)

(549) **merenq* 'goanna sp.' : D *merenq*, R *merenq*

(550) **merk* 'tick' : D *merk*, Ja *merk*, BGW *mek*, Ngal *merk*,

(551) **merlemerle* 'butterfly' : D *merlemerleq*, Ja *merlemerle*, BGW *merlemerle*, R *merlemerleq*, W *mirlimirli* (Ngaliwurru *marlimarli*, Wagiman *marlimarli*, Wardaman *merlemerlem*)

(552) **merleppeq* 'shoulder blade' : Ngal *merleppeq*, Ngan *merleppeq* ~ *mirlippiq*, Nu *mirlipi* (Ritharrngu *mirlipiq*)

(553) **merlmerlmi* 'pimple stick' : Ja *merlmerlmi*, M *merlmerlmin*, W *mirlmirlqmi* (Kungarakany *mirlmirlmi*, Larrikiya *milmil-ma*, Wagiman *milmilma*)

(554) **merre* 'north' : Ja *merre*, W *merri*

(555) **mic-* : Ja *mic-co*(*yo*)- 'to not know' (*co*(*yo*)- 'to crush' *as independent verb*), W *mic-na-* 'to know' (*na* 'to see' as independent verb)

(556) **mic* 'goanna hole' : D *mic*, BGW *mic*, R *mic*

(557) **mic* 'louse' : Ngal *mic*, Ngan *mic*, Nu *miic*, R *mic*

(558) **mik* 'to use mother-in-law language' : Ja *mik-*, BGW *mik-*

(559) **mikmik* : W *mikmik* 'native rat' (Kungarakany *mikmik* 'native cat')

(560) **milq* 'forehead' : D *milq*, BGW *milq*

(561) **milqtarl* 'blue tongue' : D *milqtarl*, BGW *milqtarl*

(562) **mimi* 'FaMo' : D *mimi*, Nu *miimii* 'FaMo' (Ritharrngu *miimii*)

(563) **-miny* 'negative' : Ja *-miny* 'privative', BGW *miny*, W *-miny* 'privative'

(564) **mirlirl-* 'to rise (of the sun)' : Ja *mirlirl-*, M *mirlirl-* (Wardaman *mirlirlma*)

(565) **mirlq-* 'to shine' : W *mirlq-* (Kamu *mirlq-*)

(566) **mirni* 'shoulder' : D *mirni*, Ja *-mirni*, R *mirni* 'shoulder blade'

(567) **mirnicca* 'scrub' : Ngal *mirnicca*, Ngan *mirnicca*, Nu *mirnica* (Ritharrngu *mirnica*, Warndarrang *mirnica*)

(568) **mirq* 'cave' : Ngal *mirq*, Ngan *mirq* 'jail', *?*R *mvrngq* (Ritharrngu *mirq*)

(569) **mirr-* : W *mirr-* 'to be noisy' (Matngele *mirr-* 'to thunder', Wagiman *mirr* 'to be noisy')

(570) **mirricci* 'barramundi' : Ngal *mirricci*, Ngan *mirricci* (Ritharrngu *mirrici*, Warndarrang *mirrici*)

(571) **mirrngq-* 'to be hot' : D *mirrngqmirrng-*, Ja *mirrngq-*, BGW *mirrq-*, W *mirrngq-* (Kamu *mirrngq*, Wagiman *mirrngq*)

(572) **mirrq* 'sharp' : D *mirrq*, BGW *mirrq-*

(573) **mirtimirti* 'rib' : Ngal *mirtimirti*, Ngan *mirtimirti* (Ritharrngu *mirtimirti*)

(574) **mitturru* 'tick' : D *mitturru*, Ja *mitturru*, BGW *mitturru*

(575) **-mo* 'bone' : D *mo*, Ja *-mo*, BGW *-cat-mo* 'inside of kangaroo thigh' [cf. **-carr* thigh], *-rak-mo* 'hipbone, pelvis' [cf. **-rtak* anus/pelvis], *?*Ngan *moo* 'knee', *?*R *mo* 'knee', W *-mu* (Kungarakany *-mu*)

(576) **moc* 'nut of pandanus' : Ngan *moc*, R *moc*

(577) **moc-* 'to mix' : Ja *moc-*, W *muc-*

(578) **mocarngq* 'bee sp.' : D *mocarngq*, BGW *mocaq*

(579) **mokurrkurr* 'clan' : Ja *mowurrwurr*, BGW *-mokurrkurr*

(580) **mol/rlerreny* : Ja *morlerreny* 'mortuary package of bones', M *mulirriny* 'large bones of arm and leg'

(581) **monic-* 'secretly' : BGW *monic-*, Ngal *monic-*, Ngan *moonic*, R *monic-*

(582) **mop* 'to break, to snap' : M *mop* (Wardaman *mop*)

(583) **moppan* 'tree sp.' : D *moppan*, BGW *moppan*, R *moppanq*

(584) **mork* 'grub, fly' : *?*D *morl* 'blowfly', Ja *mork* 'fly', BGW *mok*, Ngal *mork* 'grub', Ngan *mork* 'grub', R *morq* 'fly', *?*W *ngukmurlk* 'blowfly' [*?nguk* guts/faeces + **mork*]

(585) **morla* : Ja *morla(wk)* 'father's cross-cousin', BGW *morla* 'mother's older sister',

(586) **morlel* 'blue-tongue lizard' : D *molel*, Ja *morlel*, BGW *molel*

(587) **morlk-* 'secretly' : Ja *morlk-*, W *mok-*

(588) **morlk* 'to sit quiet' : M *morlk* (Wardaman *morlk* 'stop quiet, be still')

(589) **-morlo* 'hip' : *?*D *morlo* 'tail', Ja *-morlo*, *?*R *morlo* 'tail', W *-murlu* 'hip ~ small of back'

(590) **morlo* 'road' : Ngan *morlo*, R *morlo* (Ritharrngu *marla*)

(591) **morlu* 'didgeridoo' : D *morlu*, BGW *morle*, *?*Ngan *molq*

(592) **morna-* 'to carry on shoulder' : Ja *morna-*, BGW *morne*

(593) **mornrte* : Ja *mornrte* 'poison', M *mornrte* 'power', BGW *-marnrte* 'ghost, corpse'

(594) **morr* 'to be get dark' : M *morrmorr* (Wardaman *morr*)

(595) **morropporl* 'catfish' : Ja *morropporl*, M *morroporl*

(596) **mot-* 'to be quiet' : Ja *mot-*, BGW *mot-*, Ngal *mot-*, W *mot-* (Kungarakany *mot-*)

(597) **mot* 'to cut' : M *mot* (Wardaman *mot*)

(598) **muc* 'rainbow serpent' : BGW *muc*, Ngal *muc*, Ngan *muc* (Ritharrngu *muuc*)

(599) **muccu* 'coolibah' : Ngal *muccu*, Ngan *muccu*, Nu *wumutcu* (Ritharrngu *mucu*, Warndarrang *mutcu*)

(600) **mukka* 'indeed' : Ngal *mukka*, Ngan *mukka*, Nu *muka* (Ritharrngu *muka*)

(601) **mukmuk* 'owl sp.' : D *mukmuk*, Ja *mukmuk*, BGW *mukmuk*, W *mukmuk* (Kamu *mukmuk*, Jaminjung *mukmuk*, *Larrakiya mukmuk-pa*, Limilngan *mukmuk ilamirl*, Wagiman *mukmuk*, Wardaman *mukmuk*, Warndarrang *mukmuk*)

(602) **mul/rlmu* 'paperbark sp.' : D *murlmu* R *mulmu*

(603) **mulu-* : Ja *mulu-* 'necronym', Ngal *mulu-* 'necronym', W *mulu-* 'denizen'

(604) **mululuk* 'conkerberry' : D *mululuk*, Ja *mululuk*, Ngal *mululuk*, Ngan *mululuk*

(605) **mululuk* 'initiand' : Ja *mululuk*, M *mululuk* 'young child', W *mululuk* (Kamu *mululuk*, Wagiman *mululuk*, Wardaman *mululuk*)

(606) **muluppirnrti* 'tree sp.' : D *muluppirnrti*, Ja *muluppirnrti*

(607) **mulyurruny* 'ironwood' : D *mulyurruny*, Ja *mulyurruny*, BGW *mulurru*

(608) **mun* 'mud cod' : Ja *mun*, W *mun* (Wagiman, Wardaman *munin*)

(609) **-mun/rncum* 'shoulder' : Ngal *-murncum*, W *-muncum*

(610) **mungu* 'wrong' : D *mungu*, BGW *mungu*

(611) **munguyq* 'all the time' : D *munguyq* 'everything', BGW *munguyq*, Ngan *munguyq-* 'constantly', R *munguyq* 'all the time' (Ritharrngu *munguyq-* 'constantly)

(612) **munke/u-* 'to follow' : D *munku-*, BGW *munke-*, Ngal *munku-*, Ngan *munku-* (Ritharrngu *munku-*)

(613) **munmunq* 'grass sp.' : D *munmun*, Ngan *munmunq*, R *munmunq* (Ritharrngu *munmunq*)

(614) **munpa* 'sorcery' : M *munpa* (Wardaman *munpa*)

(615) **munun* 'dark' : D *munun*, BGW *munun*, Ngal *murnun*, Ngan *munung*

(616) **mup-* 'to be blocked' : D *peng-mup-* 'to forget', Ja *mup-*, Ngal *mup-*, W *mup-*

(617) **muqmu* 'spoonbill' : Ja *kemuqmu*, BGW *kemuqmuq*, W *muqmumi*

(618) **murl* 'to blindfold' : M *murl* (Wardaman *murl*)

(619) **murlili* 'fish sp.' : D *murlili*, R *murlili*

(620) **murlp* 'to be many' : M *murlp* (Wardaman *murlp*)

(621) **murr(k)ka* 'woven item' : Ja *murrkka* 'dillybag', BGW *murrka* 'hand-held string bag'

(622) **murrkkun* 'three' : ?M *morrko* 'a few' (Jaminjung *murrkun*, Wagiman *murrkkun*, Wardaman *murrkun*)

(623) **murrnginy* 'shovel spear' : BGW *murrnginy*, Ngal *murrnginy*, Ngan *murrnginy*, R *murrnginy* (Ritharrngu *murrnginy*)

(624) **murrppunq* 'tree sp.' : Ngal *murrppunq*, Ngan *murrppunq* (Ritharrngu *murrpunq*)

(625) **murru* 'flying fox' : D *murru*, BGW *murru*

(626) **murrumpic* 'dragonfly' : Ja *murrumpic*, W *murrumpic*

(627) **murrungkurn* 'black currant' : D *murrungkurn*, Ja *murrungkurn*, M *murrungkurn*

(628) **murrurnmani* 'plant sp.' : D *murrurnmani*, Ja *murrurnmani*

(629) **murti* 'FaFa' : D *murti*, Ngan *murti*, Nu *muurri*, R *murti* (Warndarrang *muri*)

(630) **mut* 'body hair' : D *mut*, BGW *mut*

(631) **mutmurr* 'fly sp.' : Ja *mutmurr*, BGW *mutmut*

(632) **mutta* 'spider' : D *mutta*, R *mutta*

(633) **mutta* 'sun' : D *mutta*, R *mutta*

(634) **muy-* 'to lose' : W *muy-* (Kungarakany *muy-*)

(635) **muya* 'tucker' : Uw *muyi*, W *muya*

(636) **mVmVm* 'cross-grandparent' : Ja *mamam* 'FM', BGW *mamam* 'MF', Ngal *memem* 'cross-grandparent', D *mamam* Ngan *memem* 'FM', R *mamamq* 'MF, brother-in-law'

(637) **Na-cik* 'frogmouth' : Ja *na-cik*, BGW *na-cik*

(638) **Nal* : Ja *rnal* 'countryman', W *rnal* 'man'

(639) **Namarnkorl* 'barramundi' : D *namarnkorl*, BGW *namarnkorl*

(640) **Namarr* 'male kangaroo' : D *namarr*, R *namarr*

(641) **Namorrortrto* 'falling star' : BGW *namorrortrto*, R *namorrortrto*

(642) **Nan* 'there' : M *nan* (Wardaman *nan-*)

(643) **Nana-* 'to sing' : W *rnana-* (Kamu *rnana*)

(644) **Nangamung* 'black flying fox' : D *nangamung*, R *nangamung*

(645) **Nangkurru* 'saltwater crocodile' : Ngal *rnangkurru*, Ngan *rnangkurru* (Warndarrang *rnangkurru*)

(646) **Nanti(l)ttil* 'kidney' : W *an-ti(l)ttil* (Kungarakany *nantittil*, Kamu *antilttil*, Matngele *nantatil*)

(647) **Narrq-* 'to shave' : Ja *rnarrq-* (Wagiman *narrq*, Wardaman *rnarrma*)

(648) **Nart* 'whole lot' : M *nart* (Wardaman *nart*)

(649) **Nento/u* 'horse' : Ja *rnento*, M *rnento*, BGW *lento*, W *rnentu* (Kamu *nentu*, Jaminjung *nintu*, Matngele *nentu*, Wagiman *nento*, Wardaman *rnento*)

(650) **New* 'to grab' : M *new* (Wardaman *new*)

(651) **Ney* 'elbow' : D *ney*, BGW *-ney*, ?Ngal *rneyqrneyq-* 'to lie on side with hand supporting head'

(652) **Nin* 'small bird sp.' : D *nin*, Ja *rnin*, BGW *nin*, Ngal *rninqninq*, Ngan *rninq*, Jaminjung *nini(pi)*, Ritharrngu *nyinq*, Wagiman *nini*, (Warndarrang *rninin*)

(653) **No-ma-* 'to smell (tr)' : D *rno-ma-*, Ja *rno-ma-*, M *rnuma-*, BGW *no-me* (Burarra *rnuma-*)

(654) **Norn* 'water rat' : Ja *rnorn*, W *rnurn*

(655) **Nornorrmi* 'insect sp.' : Ja *rnornorrmi*, BGW *nornorrmi*

(656) **Norr* 'stinking' : D *rnurru*, Ja *-rnorr/rnot-*, M *rnatnarr*, BGW *nut-*, R *rnurru*

(657) **Nort* 'to be heaped' : M *nort* (Wardaman *nort*)

(658) **Nulq* 'possessions' : Ngal *rnulq* 'coolamon, car', R *rnulq* 'swag'

(659) **-Nuny* 'saliva' : D *rnuny*, Ja *-rnuny*, BGW *-nuny*

(660) **Nurric* 'water weed' : D *nurric*, R *rnurric*

(661) **NVrrngq-* : Ngan *rnorrngq-* 'to snore', W *rt/rnu/örrngq-* 'to snort [as of a pig']' (Kamu 'to snort' *rnörrngq-*, *Ritharrangu narrngq-* 'to snore')

(662) **nga(c)ci-* 'to sneeze' : D *ngacci-*, Ja *ngaci-*, BGW *ngacci-*, W *ngacci-* (Kamu *ngacci*, Wardaman *ngacirrma*)

(663) **ngaccal* 'spring' : M *ngacal*, Ngal *ngaccal*, Ngan *ngaccal*, Nu *ngacal*, R *ngaccal* (Warndarrang *ngacal*)

(664) **ngakngak* 'grey-crowned babbler' : Ja *ngakngak*, BGW *ngakngak*

(665) **-ngal/rrk* 'mouth' : Ja *-ngalk*, Uw *-ngarrk*

(666) **ngal/rrq-* 'out/up' : BGW *ngarrq-* 'to get out', Ngal *ngalq-* 'to climb/go up', Ngan *ngalq-* 'to go up', R *ngalq-* 'to climb/go up', W *ngalq-* 'to come/get out/up'

(667) **ngalelek* 'white corrella' : D *ngalelek*, Ja *ngalelek*, M *ngelele*, BGW *ngaleleq*, Ngan *ngalalak*, W *ngalelek* (Kamu *ngalalak*, Wagiman *ngalalak*, Wardaman *ngelelek*)

(668) **ngalicirri* 'female plains kangaroo' : M *ngalicirri* (Wardaman *ngalicirri*)

(669) **ngal-ka-* 'to find' : D *ngal-ka-*, BGW *ngal-ke-*

(670) **ngal-koqpany* 'old woman' : D *ngal-koqpany*, BGW *ngal-koqpany*

(671) **ngal-makkawarre/i* 'catfish' : D *ngal-makkawarre*, BGW *ngal-makkawarri*

(672) **ngampirnqngampirn* 'wild potato' : Ngal *ngampirnqngampirnq*, Ngan *ngampirnqngampirn*, Nu *wungampirnngampirn* (Ritharrngu *ngampirnqngampirn*, Warndarrang *ngampirtngampirt*)

(673) **nganapparru* 'buffalo' : Ja *nganapparro/u*, BGW *nganapparru*, R *nganapparru* (Burarra *nganapparra*, Gaagudju *anaparru*, Ritharrngu *nganaparraq*)

(674) **ngani* 'language' : Ja *ngani*, M *ngani*, W *ngo/uni* (Kungarakany *ngen*)

(675) **nganka-* 'to talk' : Ja *nganka-*, Uw *ngankV-* (Kungarakany *ngenke*, Larrikiya *anka ~ anki*)

(676) **-nganycurla* 'eye' : Ngal *-nganycurla*, Ngan *-nganycurla*

(677) **ngapak* 'eucalyptus sp.' : Ja *ngawak*, *?*BGW *ngaparrak*, Ngal *ngapak*

(678) **ngar* 'hair' : Ja *-ngar* 'hair', W *-ngar* 'fur, body hair' (Kamu *ngarngar* 'body hair')

(679) **ngarl* 'saliva' : Ngal *ngarl*, Ngan *ngarl*, Nu *ngarl* (Ritharrngu *ngarl*)

(680) **ngarlan* 'turtle shell' : D *ngarlan*, Ngan *ngarlan* (Ritharrngu *ngarlan*)

(681) **ngarlk* 'slope' : D *ngarlk*, Ja *-ngarlk*, R *ngarlk* 'bank of river'

(682) **ngarnrtak* 'dog louse' : M *ngarnrtak* (Wardaman *ngarnrtak*)

(683) **ngarrac* 'snake' : Ngan *ngarrac*, R *ngarrac* (Ritharrngu *rangarrac*)

(684) **ngarrac* 'white cockatoo' : D *ngarrac*, Ja *ngarrac*, BGW *ngarrac*

(685) **ngarrayarl* 'saratoga' : Ngal *ngarrayarl*, Ngan *ngarrayarl* (Ritharrngu,Warndarrang *ngarrayarl*)

(686) **ngarrk* 'I, me' : Ja *ngarrk*, W *ngek* (Umbugarla *ngarrk*)

(687) **ngart* 'short neck turtle' : D *ngart*, Ja *ngart*, BGW *ngart*, W *ngart* (Burarra *ngart*, Kungarakany *ngart*)

(688) **ngat/rterr* 'fishing line' : Ja *ngarterr*, W *ngiterr*

(689) **ngaththu* 'cycad' : Ngan *ngaththu*, Nu *ngathu*, R *ngattu* (Ritharrngu *ngathu*, Warndarrang *mangacu*)

(690) **ngatpan* 'rifle fish' : Ngal *ngatpan*, Ngan *ngatpanq* (Ritharrngu *ngatpanq*)

(691) **ngawkngawk* 'lily sp.' : D *ngawkngawk*, Ja *ngawkngawk*

(692) **ngawun* : Ja *ngawun-pu-* 'to not know' (Wardaman *ngawun* 'no, nothing')

(693) **ngayawk-* 'to whisper' : Ja *ngayawk-* 'to whisper', *?*M *ngayak-* 'to tell s.o. about', W *ngayok- to whisper*

(694) **ngec-* 'to ask' : Ja *ngec-*, W *ngic-wu-*

(695) **ngek* 'night' : Ja *ngek*, W *ngikpa* (Kungarakany *ngik*)

(696) **ngele* 'mother' : Ngan *ngele*, R *ta-ngala* (Wagiman *ngala*)

(697) **ngemq-* 'to be full' : Ngal *ngemq-*, Ngan *ngemq-*

(698) **-ngerng* 'pouch' : Ja *-ngerng*, BGW *-ngeng*

(699) **ngerq* 'heart' : D *ngvrk*, Ngal *ngerq*, Ngan *ngerq*, R *ngerq* (Warndarrang *ngirngir*)

(700) **ngerq-* 'to breathe, to have a breath, to have a rest' : D *ngerq-wolwol-* 'to be shortwinded', Ja *ngerq-*, M *ngirq-* 'to breathe', BGW *ngeq-*, Ngal *ngerq-*, R *ngernger* 'to get puffed', W *nge/irq-* 'to breathe' (Ritharrngu *ngirq-* 'to breathe')

(701) **ngerre* 'sleep' : Ngal *ngerre*, Ngan *ngerre*

(702) **ngerrk* 'white cockatoo' : Ngal *ngerrk*, Ngan *ngerrkngerrk* (Ritharrngu *ngirrkngirrk*)

(703) **-ngey* 'name' : D *-ngi*, Ja *-ngi/-nge*, *?*M *ni*, BGW *-ngey*, Ngal *-ngey*, Ngan *ngic-* [in compounds], R *nge*, W *-nyi* (Kungarakany *-ngi*,*?*Kamu *ni*, Wardaman *-ngyi*)

(704) **ngik* 'black currant' : W *ngik/ng* (Matngele *nging*)

(705) **nginyq-* 'to blow nose' : W *nginyq-* (Kamu *nginy-*)

(706) **-ngo/urrk* 'rib': Ja *-ngurrk-mo* 'rib bone', BGW *-ngorrk* 'flank', R *ngorrok* 'rib part'

(707) **ngo/uy* 'sibling-in-law' : Ja *nguy*, Ngal *ngoy*

(708) **ngokngo* 'pandanus sp.' : D *ngokngo*, BGW *ngokngo*

(709) **ngol* 'cloud, sky' : D *ngol*, Ja *-ngol* 'sky', BGW *-ngol* 'cloud, *-pam-ngol* [compound involving *pam* 'head'], R *ngol* 'cloud', W *pamngul* 'cloud' [old compound involving *pam* 'head']

(710) **ngol/rlok-* 'to talk' : W *nguluk-* (Wardaman *ngorlokpa*)

(711) **ngolongkoq* 'river red gum' : Ngal *ngolongkoq*, Ngan *ngolongkoq*, Nu *ngalangka* (Marra *ngalangka*, Ritharrngu *ngalangkaq*)

(712) **ngolyowq-* 'to echo' : D *ngolyowq-*, Ja *ngolyoq-*

(713) **ngonto* 'wind' : Ngal *ngonto*, Ngan *ngonto* (Ritharrngu *nganta*)

(714) **ngorl/rq-* 'to fall' : D *ngorlq-*, Ngal *ngorq-*

(715) **ngorlo* 'eel' : D *ngorlo*, R *ngorlo*

(716) **ngorlomorro* 'wallaby sp.' : D *ngorlomorro*, Ngal *ngorlomorro*, Ngan *ngorlomorro* (Ritharrngu *ngarlamarra*, Warndarrang *ngulumurru*)

(717) **-ngoro* 'ankle' : Ja *-ngoro*, W *-nguru*

(718) **ngorr-ka-* 'to carry on back/shoulder' : D *ngorr-ka-*, BGW *ngorr-ka-*

(719) **ngorro* 'flower' : Ngal *ngorro*, Ngan *ngorro*

(720) **ngort-* 'to suck blood (native doctor as curative practice)' : Ja *ngort-*, BGW *ngort-*

(721) **ngortokoc* 'ankle' : D *ngortokoc*, Ngal *ngortokoc*

(722) **ngoyongoyo* 'sleepyhead' : D *ngoyongoyo*, BGW *ngoyongoyo*

(723) **ngu-* 'to buzz' : W *ngu-* (Kamu *ngu*, Wagiman *ngow*)

(724) **nguk* 'guts' : *?*D *nguqyaqyaw*, Ja *nguk*, BGW *nguk*, Ngal *ngoq*, Ngan *nguk*, Nu *ngu*, R *nguwaq*, Uw *nguk*, W *nguk* (*?*Burarra *ngukkarta*, Umbugarla *nguk*, Wagiman *nguq-un*, Wardaman *nguwun*)

(725) **nguk-tirrq-* 'to fart' : Ja *nguk-tirrq-*, BGW *nguk-tirrq-*

(726) **nguntic* 'snake sp.' : D *nguntic*, Ngal *ngurnrtic*

(727) **ngunycu* 'same' : Ngal *ngunycu*, Ngan *ngunycu*, Nu *ngunycu* (Warndarrang *ngunycu-ngunycu*)

(728) **ngurl* 'black' : D *ngurlmiyi*, Ngal *ngurlyiq*

(729) **ngurlirri* 'duck sp.' : Ja *ngulirri*, Ngal *ngurlirri*, Ngan *ngurlirri* (Warndarrang *ngulirri*)

(730) **ngurniq* 'firestick' : Ngal *ngurniq*, Ngan *ngurniq*, R *ngurnvq*

(731) **ngurrng(ki)-* 'to dislike' : D *ngurrng-tu-* 'to hate', Ngal *ngurrngki-paya-* 'to be jealous of'

(732) **ngurru* 'catfish sp.' : Ngal *ngurru*, Ngan *ngurru*, Nu *rnangurru* (Dhuwal, Marra, Wardnarrang *ngurru*)

(733) **ngurru(rn)rtuc* 'emu' : D *ngurruntuc ~ ngurrurtu*, Ja *ngurrurnrtuc*, BGW *ngurrurtu*, Ngal *ngurrurnrtuc*

(734) **ngurrumq-* 'to dig' : Ngal *ngurrumq-*, Ngan *ngurrumq-*

(735) **ngurt-* 'to be quiet' : D *ngurt-*, BGW *ngurt-* 'to stop', Ngal *ngurt-* 'to be quiet, to stop'

(736) **ngurtul/rl-* 'to thunder' : D *ngurturl-*, BGW *ngurtul-*

(737) **ngVrr(ng)-* 'to growl' : Ja *ngurr-*, BGW *ngerr-*, W *ngirrng-* (Kamu *ngirrng-*, Wardaman *ngurrngma*)

(738) **nyaknyak* 'to make noise' : D *nyaknyak-*, Ja *nyaknyak-*

(739) **nyalk* 'rain' : Ngan *nyalk*, R *nyalk* (Ritharrngu *nyalk*)

(740) **nyarlkkan* 'orchid sp.' : D *nyarlkkan*, Ja *nyarlkkan*, BGW *nyarlkkan*

(741) **nyarra* 'father' : Ngan *nyarra*, Nu *nyarra*, R *nyarra*

(742) **nyawk-* 'to talk' : Ngal *nyawk-*, Ngan *nyawk-*, R *nyawk-*

(743) **nyirrq-* 'to dislike' : *?*D *nyerrq-* 'to swear at', Ja *nyirrq-*, BGW *nyirrq-*

(744) **nyiwk* 'to sprinkle' : W *nyiwk-* (Kamu *nyiw-*, *?*Wardaman *nyilk*)

(745) **nyolk/q-* 'to swallow' : BGW *nyolq-*, W *nyolk-*

(746) **nyuc-* 'to blow nose' : D *nyuc-*, Ja *nyuc-*, M *nyuc-*, BGW *nyuc-* (*?*Wardaman *nyunyma*)

(747) **nyuluk* 'native cat' : Ngal *nyuluk*, Ngan *nyuluk*, *?*Nu *nyaalik*, *?*R *yulukyuluk*

(748) **nyurric* 'small bird sp.' : D *nyurric*, BGW *nyurric*, Ja *nyurric* (Wardaman *nyorricpan*)

(749) **-pa* 'collective' : Ja *-pa*, W *-pa/-pe* (*?*Kamu *-pu* [kin nouns only])

(750) **-pa* 'perlative' : Ja *-pa/-wa* 'ablative', R *-pa*, W *-pa* (Kamu *-pa*, Wagiman *-pa* 'locative')

(751) **pa(c)cu* 'wild potato' : D *paccu*, BGW *pacu*

(752) **pa(p)pa* 'sibling' : Ja *papa* 'older sibling', M *papa* 'sister',*?*BGW *pappa* 'triangular kin term referring to person who is G-1 for speaker and G+1 for addressee', *?*Ngal *pappa* 'father', *?*R *pappa* 'father' *wawaq* 'older brother', Uw *pappa* 'brother', W *pappa* 'sibling' (Kungarakany *pappa* 'brother', Nungali *papa* 'older brother', Wagiman *papa* 'brother')

(753) **pak* : BGW *pak* 'water weed', Ngal *pak* 'pond algae'

(754) **pak-* 'benefactive prefix' : Ngal *pak-*, Ngan *pak-*, R *pak-*

(755) **pak-* 'to break up' : D *pak-*, BGW *pak-*, W *pak-* (Jaminjung *pak*, Wagiman *pak*, Wardaman *pak-* 'to break')

(756) **pakkaci* : D *pakkaci* 'tree rat', BGW *pakkaci* 'quoll'

(757) **pal/rlangkin* 'new' : M *parlangkan* (Wardaman *palangkin*)

(758) **pal/rlangu* 'shark' : D *palangu*, R *parlangu*

(759) **pal/rlpmi* : Ja *-palpmi* 'wide', W *-parlpmi* 'shallow'

(760) **pala-* 'side' : D *pala-*, Ngal *pala-*, Ngan *pala-* (Ritharrngu *pala-*)

(761) **palac* 'leech' : D *palac*, Ja *palac*, BGW *palac*

(762) **palak* 'cousin' : D *palak*, BGW *palak* 'mother-in-law' (*respect register*), Ngal *palak*, R *palak*

(763) **palay* 'long ago' : D *palay*, R *palay*

(764) **-paliwu* 'wide' : Ja *-paliwu* 'numerous', Wa *-pali-wu* 'wide' (*note* Ja *-palpmi* 'wide, numerous')

(765) **palkenykeny* 'pulse' : D *palkenykeny*, Ja *palkenykeny*

(766) **palkkiny/c* 'wallaby' : D *palkkic*, M *palkic*, Ngan *palkkic*, R *palkkic* (Kungarakany *palkkiny*, Wagiman *palkkiny*)

(767) **palkku* 'rope' : Ngal *palkku*, Ngan *palkku*, R *palkku* (Ritharrngu *palkku*)

(768) **palppara* 'mate' : Ngal *palppara*, Ngan *palppara*, Nu *palpara* (Ritharrngu *palppara*)

(769) **palq-* 'to block' : Ja *palq-*, BGW *palq-*

(770) **-palukkayin* 'ritual sponsor' : Ja *-palukkayin*, BGW *-palukkayin*

(771) **-pam* 'head' : Ja *-pam*, M *pap*, BGW *-pam* (*in some compounds*), R *pamkurlkurl-* 'to sit head-bowed', Uw *-pam*, W *-pam* (Kungarakany *pem*, Wardaman *-pam*)

(772) **pam-ma* 'to bake' : Ja *pa-ma*, W *pam-ma*

(773) **-pamo* 'plant part' : D *pamo* 'flower', Ja *-pamo* 'seed', BGW *-pamo* 'bud', R *pamo* 'flower type'

(774) **pam-parl* 'bald' : Ja *pam-parl(ac)*, W *pam-parl* (Wagiman *pamparl*)

(775) **pamporkpampork* 'ant sp.' : Ngan *pomporkpompork*, Nu *pamparpampar*, R *pamporkpampork* (Ritharrngu *pamparkpampark*)

(776) **pampul/rla* 'Ficus opposita' : BGW *pampula*, Ja *pampurla*

(777) **pampurr(u)q* 'stump' : D *pampurrq*, R *pampurruq*

(778) **pamterk* 'turtle sp.' : D *pamterk*, Ja *pamterk*, BGW *pamrtek*

(779) **pamuny* 'canoe' : W *pamuny* (Kungarakany *pamuny*)

(780) **pamurru* 'goose' : D *pamurru*, Ja *pamurru*, BGW *pamurru*

(781) **panganypangany* 'plant sp.' : D *panganypangany*, Ja *panganypangany*

(782) **pantimi* 'women's dance' : Ja *pantimi*, W *pantimi ~ parnrtimi* (Jaminjung, Wagiman, Wardaman *pantimi*)

(783) **pany* 'smell' : Ja *pany*, BGW *pany*

(784) **panykarrang* 'wet season' : D *pangkarrang* 'beginning of wet', Ja *pangkarrang* 'middle of wet', BGW *pangkerreng* 'end of wet', W *punykarrang* 'end of wet'

(785) **pany-pu-* : Ja *pany-pu-* 'to collect honey', *?*R *parn-pu-* (Wardaman *pany-pu-* 'to fill container with solids [including honey]')

(786) **pap* 'to put down' : Ngal *pap* 'noise of setting down', Ngan *pap* 'to put down'

(787) **pap/q-* 'to ride' : D *pap-*, Ja *pap-ma-*,W *paq-pu-*

(788) **papuc* 'yam sp.' : W *papuc* (Kungarakany *papuc*, Larrikiya *pawic-pa*, Wagiman *pawuc-cin*)

(789) **par(a)ccarr* 'fish sp.' : D *paraccarr*, R *parccarr*

(790) **-parang* 'cheeky' : D *parng*, Ja *-parang*, BGW *-pang*, Ngan *-parng* 'bitter, sour', R *parng* 'bitter, salty', Uw *-poreng*, W *-pulang*

(791) **parla* 'vagina' : Ja *-parla*, M *parla* 'subincision', BGW *-parle*

(792) **-parlac* : Ja *-parlac* 'level ground', BGW *-palac* 'clear ground'

(793) **parlan-* 'nearly' : D *parlan-*, W *parlan-*

(794) **parlaq* 'track' : D *parlaq*, BGW *parlaq*

(795) **parlk-* 'to overflow' : BGW *parl-*, W *parlk-*

(796) **parlkkan* 'boomerang' : D *parlkkan* 'mimih spirit's boomerang', Ja *parlkkan* M *parlkan*

(797) **parlparl* 'to make a bed' : M *parlparl*, W *par-* (Wardaman *parlparlpa*)

(798) **parlpparl* 'flat' : Ja *perlpperlmi*, M *perlperl*, W *parlpparl* 'flat hard rock' (Matngele *parlparl*, Ngaliwurru *parlparlma*, Wagiman *perlperl-in*, Wardaman *parlparlpan* ~ *perlperlin*)

(799) **parna* 'clause particle' : D *parna* 'might be', BGW *parna* 'oh well'

(800) **parna(c)ca* 'tree sp.' : Ja *parnacca*, BGW *parnaca*

(801) **parnangka* 'spotted nightjar' : Ngan *parnangka*, Nu *parnangkarrk*, W *parnangka* (Ngaliwurru, Wagiman, Wardaman *parnangka*)

(802) **parnarr* 'Owenia vernicosa' : Ja *parnarr*, M *parnarr*, Ngal *parnarr*, Ngan *parnarrq*, Nu *parnarr*, ?R *ngarnarr* (Marra, Wardaman, Warndarrang *parnarr*)

(803) **parnca* 'white ochre' : D *parnca*, M *parnca*, Ja *parnca* (Wardaman *parnca*)

(804) **parnrtarri* 'circumcised' : Ngal *parnrtarri*, Ngan *parnrtarri*

(805) **parr-* 'to open' : D *parr-*, Ngal *parr-*, Ngan *thaa-parr-* 'to open one's mouth' (Ritharrngu *thaa-parr-* 'to open one's mouth')

(806) **parra(k)karl* 'spear tree' : D *parrakkarl* 'Bambusa arnhemicus', Ja *parrakkarl*, M *parrakarl*, BGW *parrakarl*, Ngal *parrakarlq*, Ngan *parrakkarlq*, W *parra(k)karl* (Alawa, Jaminjung, Wagiman, Wardaman *parrakarl*)

(807) **parraca* 'kookaburra' : Ja *parraya*, BGW *parraca*

(808) **parrakparrak* 'darter (bird sp.)' : D *parrakparrak*, Ja *parrakparrak*, M *parrakparrak*, BGW *parrakparrak* W *parrakparrak-kula* [the Warray form is a place name, *parrakparrak* is not used to refer to the cormorant sp.], (Jaminjung, Wagiman, Wardaman *parrakparrak*)

(809) **parram* 'plant sp.' : D *parram*, BGW *parram*

(810) **parrarn* : Ja *parrarn* 'rockhole', BGW *parrarn* 'end of cliff'

(811) **parri* : Ja *parri* 'native cat', BGW *parri* 'native rat'

(812) **parrk* 'black wallaroo' : D *parrk*, Ja *parrk*, BGW *parrk*, Ngan *parrk*, R *parrk*

(813) **parrk/q-* 'to break/crack' : Ja *parrq-* 'to break (intr)' , BGW *parrk-* 'to crack (tr)' [meanings?]

(814) **parrparr-* 'to shake' : Ja *parrqparr-*, W *pepe-* (Kamu *parrparr*, Matngele *perrperr*)

(815) **parrq-* 'to dawn' : D *parrq-*, BGW *parrq-*, ?W *parq-*

(816) **-part* 'knee' : D *part*, Ja *-part*, BGW *-part*, W *-part*

(817) **part* 'to grab' : D *part*, Ngan *part*, R *part*

(818) **partarta* 'baby' : W *partarta* (Wardaman *partarta*)

(819) **partrta-* 'benefactive' : Ngal *partrta-*, Ngan *partrta-* 'Comitative', R *partrta-* 'Comitative'

(820) **partrti* 'marchfly' : D *partrtv*, Ngal *partrtiq*, Ngan *partrtiq*, R *partrtv(q)*

(821) **pat* 'rock' : D *pat*, Ja *pat*, BGW *pat*

(822) **patporng* 'wallaby sp.' : D *patporng*, BGW *patpong*

(823) **pa-wo/u* : D *pawo* 'to leave', Ja *pa-wu-* 'to pass by', BGW *pawo* 'to leave behind', ?Ngal *pawunq* 'to leave', R *pa-* 'to leave' (Past *pa-wa*)

(824) **paya* 'pelican' : Ja *paya*, Ngal *paya* (M *paya*)

(825) **pe/irrke/iq* 'green plum' : Ngan *perrkeq* ~ *pirrkiq*, R *pvrrkv/iq* (Ritharrngu *pirrkiq*)

(826) **pecca* 'quinine tree' : BGW *pecca* ~ *pette*, W *pecca*

(827) **pekka* 'file snake' : D *pekka*, BGW *pekka*

(828) **pel(k)kangqmi* 'frog sp.' : Ja *pelkkangqmi*, BGW *pelkangqmi*

(829) **pelek-* 'to lick' : Ja *perlak-*, W *pelyek-* (Kamu *pelyek-*)

(830) **peleng(k)-* 'to lick' : Ja *perlak-*, ?M *pirliny-*, BGW *pelengk-*, Ngal *perlengq-*, Ngan *pirlangq-*, R *pelengq-*, W *perlengq-* (Ritharrngu *pirlangq-*)

(831) **pelerrk* 'gecko sps' : D *pelerrq*, Ja *pelerrk*, BGW *pelerrq*

(832) **pelp* 'to stick (tr)' : Ja *pelp-*, BGW *pelp-*, *?*R *pelp-* 'to put white paint on face, to fasten, to melt (of wax)'

(833) **pemarrk* 'dew' : Ja *pemarrk*, W *pimek*

(834) **pempem* 'fish sp.' : D *pempem*, R *pempem*

(835) **-pen* 'handle' : D *pen*, Ja *-pen*, BGW *-pen*

(836) **peng-* 'hearing, understanding' : D *peng-*, Ja *peng-*, BGW *peng-*

(837) **peng* 'to snap' : M *peng* (Wardaman *peng*)

(838) **peng-tayq-* 'to remind' : D *peng-tayq-* 'to remember', Ja *peng-tayq-*, BGW *peng-tayq-*

(839) **penuk* 'bustard' : D *penuk*, Ja *penuk*, BGW *penuk*, Ngal *penuk*

(840) **-peremelk* 'shoulder blade' : Ja *-peremelk*, BGW *perimelq* 'kangaroo shoulder blade', Ngal *peremelk*, Ngan *peremelk*, Nu *wirimil*, W *-pimek*

(841) **perk* 'bad' : D *perk*, Ja *-perk*, *?*BGW *pe(r)(e)k* 'death adder'

(842) **perlu* 'aunt' : D *perleqperleq*, BGW *perlu*

(843) **pernpern* 'eucalyptus sp.' : D *pernpern*, Ja *pernpern*, BGW *-pernpern* (*?*Wardaman *penpen-* 'eucalyptus alba')

(844) **perre* 'chest' : D *perr*, BGW *perre*, Ngal *perre*, Ngan *perre*

(845) **perrepperrep* 'plover' : D *perrepperrep*, BGW *perrepperrep*

(846) **perrertperrert* 'rainbow bee eater' : D *perrertperrert*, BGW *perrertperrert*, R *perrerqperrerq*

(847) **pettelerrelerre* 'masked plover' : D *pattelerrelerre*, Ja *petelerrelerre*, Ngal *petelerrelerreq*, *?*Ngan *paccurlerrerlerreq* (Warndarrang *pitilirrilirri*, *?*Marra *pitirrirri*)

(848) **pi-* 'to drink' : Ja *pi-*, W *pi-*

(849) **pic-* : Ja *pic-ma-* 'to pick out' (M *pic-pu-* 'to correct')

(850) **piccirri* 'file snake' : D *piccirri*, Ngal *piccirri*, Ngan *piccirri* (Ritharrngu *piccirri*)

(851) **picip-* 'to squeeze' : D *picip-* 'to stir', Ja *piyip-*, BGW *picip-* 'to fasten, to tighten', W *picip-* (Larrikiya *picip*, Wagiman *picip*)

(852) **picurtu* 'whirlwind' : D *picurtu*, Ngal *picurtu*, Ngan *picurtu*, Nu *wiyirtu* (Ritharrngu *picurtu*)

(853) **pik* 'rope' : W *-pik* (Kungarakany *-pik*, Kamu *pik*)

(854) **pil/rr* 'black snake' : W *pil* (Kungarakany *pirr*)

(855) **pilirrng* 'plant sp.' : D *pilirrng*, Ja *pilirrng*

(856) **pilkpilk* 'galah' : Ja *pilkpilk*, W *pekpek*

(857) **pim* 'white ochre' : Ja *pim*, BGW *pim*, Ngal *pim*, D *pim*

(858) **pim-pu-* 'to paint/write' : D *pim-pu-*, Ja *pim-pu-*, BGW *pim-pu-*, Ngal *pim-pu-*, R *pim-pu-*

(859) **pingq-* 'to go tsk' : Ja *pingqping-* , BGW *pingq-*

(860) **pinti* 'really' : Ngal *pinti*, Ngan *pinti*, Nu *wintiyung*

(861) **pippi* 'breast' : D *pippi*, R *pippi*

(862) **pippi* 'man's child' : Uw *pippi*, W *pippi*

(863) **pir* 'to tell' : Ngal *pir-ka* 'to inform', Ngan *thowo-pirq-thu-* 'to tell a story'

(864) **pirl* 'sharp point' : Ja *pirl*, M *pirl*, Ngal *pirlq*, Ngan *pirlq*

(865) **pirliwirli* 'Acacia holosericea' : Ja *pirliwirli*, M *pirliwirli*

(866) **pirlmu* 'barramundi' : D *pirlmu*, BGW *pirlmu*

(867) **pirlq* : M *pirlq* 'to hit in upper leg' (Wardaman *pirl* 'to break long object - e.g. leg')

(868) **pirniny* 'nail' : D *pirniny*, Ja *pirniny*, Ngal *pirniny*, Ngan *pirniny*, *?*R *cilppirniny*, *?*W *pirtiny* (Ritharrngu *pirniny*)

(869) **pirnqpirnrtok* 'bird sp.' : D *pirnqpirnrtok*, Ja *pirnqpirnrtok*

(870) **pirnrte* 'plant sp.' : D *pirnrte*, BGW *pirnrte*

(871) **pirnrti* 'native mouse' : Ja *pirnrti*, W *pirnrti* (Wagiman *pirnrti*)

(872) **pirnrtu* 'biting insect sp.' : Ja *pirnrtu* 'marchfly', BGW *pirnrtu* 'mosquito'

(873) **pirnrtu* 'glossy ibis' : D *pirnrtu*, BGW *pirnrtu*

(874) **-pirr* 'hand' : BGW *-pit*, Uw *-pirr*

(875) **pirric* 'to knead' : M *pirric* (Wardaman *pirricpa*)

(876) **pirrkkurta* 'bee sp.' : Ngan *pirrkkurta*, R *pirrkkurta* (Ritharrngu *pirrkkurta*)

(877) **pirrp/q-* 'to clean' : D *pirrq-*, Ja *pirrq-*, BGW *pirrp-*, W *pirrq-*

(878) **pirti* 'beeswax' : Ja *piri*, BGW *pirti*, Ngan *pirti*, R *pirti*

(879) **pirtic-* 'nearly' : Ngal *pirtic-*, Ngan *pirtic-*, R *pertec-*

(880) **pirtippirti* 'tea tree' : Ngal *pirtippirti*, Ngan *pirtippirti*

(881) **pirtrtiny* : *?*Ngal *pirtrtiny* 'lily seed damper', *?*Ngan *pirtrtiny* 'soft'

(882) **pitort* 'plant sp.' : D *pitort*, Ja *pitort*

(883) **-piyak* 'dried up, wrinkled' : Ja *-piyak*, W *-piyak*

(884) **po* 'river' : D *po*, Ja *po-*, BGW *po-* 'water [bound form]', Ngal *po* (Gaagudju *pu*)

(885) **po(ng)q-* 'avoidance' : Ja *po(ng)q-*, BGW *pongq-*, Ngal *pongq-*

(886) **po/uy* 'ground oven' : Ja *puy*, BGW *poy*, W *poy* (Kamu *puy*, Matngele *puy*)

(887) **poccalk* 'archer fish' : Ja *poccalk*, BGW *poccalk*

(888) **pokko* 'spear' : D *pokko*, Ja *pokko*, BGW *pokko*, Ngan *pokkoq*, W *pukku* (Ritharrngu *pakkaq*)

(889) **pol* 'trouble' : Ja *pol* (*avoidance*), W *pul*

(890) **polic* 'cicatrice' : D *polic*, BGW *polic*

(891) **polk-* 'country, territory' : Ja *polk-*, BGW *polk-*

(892) **polo* : Ja *polo*(*qmi*) 'parent - spouse speaking', BGW *-polo* 'parent – spouse speaking', *?*Ngal *poloqpolo* 'woman'

(893) **polo/ung* 'rainbow serpent' : D *polung*, Ja *polung*, M *polokpan*, R *polung*

(894) **polq* 'track' : D *polq*, BGW *polq*, *?*R *porrporr*

(895) **polyong* 'to camp out' : Ja *polyong*, M *polyong*

(896) **pon* 'Dalabon' : D *tala-pon* 'mouth+pon', Ja *ngalk-pon* 'mouth+pon', BGW *tang-pon* 'mouth+pon', R *puwan*

(897) **pongka* 'goanna sp.' : D *pongka*, Ja *pongka*, BGW *pongka*, Ngal *pongka*, Ngan *pongka* (Wagiman *pongko*)

(898) **pongka* 'wattle sp.' : D *pongka*, BGW *pongka*

(899) **pony* 'finished' : D *pony*, BGW *pony*, Ngal *caqpony*, Ngan (*ca*)*-pony*, R *pony*

(900) **ponyi* 'now' : Ja *ponyi*, Ngal *ponyi*

(901) **pop-* 'to smell' : Ngal *pop-*, Ngan *pop-*, R *pop-*

(902) **-pork* 'track' : Ja *-pork*, BGW *-pok*

(903) **porlet-* 'to turn around' : D *porlet-*, BGW *porlet-*, Ngan *purlet-*, R *porlet-*

(904) **porlokko* 'water python' : D *porlokko*, BGW *porlokko*, R *porlokko*

(905) **porloq* 'tree' : BGW *porlo* 'hollow in ground where tree has been uprooted', Ngal *porloq* 'hollow log', R *porloq* 'tree'

(906) **pornorrong* 'brolga' : Ja *pornorrong*, W *pornorrong* (Wagiman, Wardaman *pornorron*)

(907) **pornrtok* 'woomera' : D *pornrtok*, BGW *pornrtok*, Ngal *pornrtok*, Ngan *pornrtok*, Nu *warnrtak*, R *pornrtok* (Kungarakany *pornrtok*, Ritharrngu *parnrtak*)

(908) **porr(q)-* 'to snore' : Ja *porr-*, W *porrq-*

(909) **portokorr* 'tree sp.' : BGW *portokorr*, Ngan *porokorrq* (Ritharrngu *pararrkarrq* ~ *purukurrq*)

(910) **portop* 'to cross' : Ngal *portop*, Ngan *portop*, R *portop-* (Ritharrngu *purtap-u*)

(911) **pot* 'fly, native bee' : D *pot*, BGW *pot*, Ngal *pot*, Ngan *pot* (*?*Ritharrngu *puwat*)

(912) **potparng* 'green ant' : D *potparng*, BGW *potpang*

(913) **powk* 'flat country, floodplain' : Ja *powk*, BGW *powk*

(914) **poyq-* : Ja *poyq-* 'to shout out', *?*M *puyq-* 'to show', W *poyq-* 'to tell, to recount'

(915) **poywek* 'velvet-tailed gecko' : D *poywek*, BGW *poywek*

(916) **puc-* 'to smoke (intr)' : Ja *pucpuc-*, BGW *puc-*, W *puc-*

(917) **pucce/iq* 'fish sp.' : Ngal *pucceq*, Ngan *puththiq*

(918) **pucuq-* 'to spin, to twist' : Ja *pucuq-*, *?*M *pucu-pucup-* 'to make fine, to soften by rubbing together', Ngal *pucuq-*, Ngan *pucuq-* (Ritharrngu *pucuq-*)

(919) **puk-* 'to dry up' : D *puk-* 'to subside', BGW *puk-*

(920) **puk-* 'to show' : Ja *puk-*, BGW *puk-*

(921) **-pukiq* 'only' : Ngal *-pukiq*, Ngan *-pukiq*

(922) **pukirri* ~ *pukurr* 'dream' : D *pukirri*, Ja *puwurr*, BGW *pukirri*, W *puke/pukut-* ~ *pukirri*

(923) **pukpuk* 'pheasant' : D *pukpuk*, Ja *pukpuk*, BGW *pukpuk* (Wagiman *pukpuk*)

(924) **pul-* 'to bury' : BGW *pul-*, Ngal *pul-*

(925) **pul(p)pul* 'paperbark sp.' : BGW *pulpul*, Ngal *pulppul*

(926) **pulccan* 'eagle' : W *pulccan* (Kamu *pulccan*, Matngele *pulccan*, Wardaman *pulyan*)

(927) **pulkkic* 'really, very' : D *pulkkic*, Ja *pulkkic*, BGW *pulkkic*, Ngal *pulkkic*, R *pulkkic*

(928) **pulkku* 'middle' : Ja *pulkku* (Wagiman *pulkku*, Wardaman *pulku*)

(929) **pulme/u* 'white plum' : W *pulme* (Kamu *pulmu*, Wagiman *pulmu*)

(930) **pulut-* : D *pulut-* 'numb', Ja *pulut-* 'to have cramps'

(931) **pum/ng* 'small black ant sp.' : D *pung*, R *pung*, W *pum*

(932) **pumapuma* 'ghost bat' : D *pumapuma*, BGW *pumapuma*

(933) **punparr* 'plant sp.' : D *punparr*, BGW *punparr*

(934) **punupun* 'file snake' : Ja *punuwun*, W *punupun* (Kamu *punupun*)

(935) **-puny* 'clump of bamboo' : Ja *-puny*, BGW *-puny*, W *puny* 'Bambusa arnhemicus'

(936) **punyciny/ng* 'lizard sp.' : D *punycing*, W *punyciny*

(937) **punyq-* 'to kiss' : Ja *punyq-*, BGW *punyq-*

(938) **puq-* 'to blow' : BGW *puq-*, Ngan *puq-*, R *puq-*, W *piq-* (Kamu *pu-* ~ *pi-*, Jaminjung *pu*, Matngele *pö-*)

(939) **pura-* 'to make' : Ja *pura-*, W *pula-* (Wagiman *poro-*)

(940) **puran* 'boomerang' : W *puran* (Kungarakany, Wagiman, Wardaman *puran*)

(941) **purarr* 'water goanna' : D *purarr*, BGW *purarr*

(942) **purlnguq* 'ashes' : Ngal *purlnguq*, Ngan *purlnguq* (Ritharrngu *purlnguq*, Warndarrang *purlngu*)

(943) **purluk* 'feather' : BGW *purluk* 'featherdown', Ngal *purluk*

(944) **purn* : *?*BGW *-purn* 'ankle', *?*Ngal *-purn* 'kneecap'

(945) **purppa* 'lily' : Ngal *purppa*, Ngan *purppaq*, R *purppa* (Ritharrngu *purppaq*)

(946) **purq-* 'to swell' : Ja *purq-*, W *puq-* (Wagiman *powq*)

(947) **purrk-na-* 'to know' : BGW *purrk-na-* 'to recognise', Ngal *purrq-na-* 'to know, to understand'

(948) **purrq-* 'to slap one's thighs' : Ja *purrq-*, M *purrpurr-* 'to clap hands, slap time', BGW *purrq-* 'to clap', W *purrq-* (Kamu *pul*, Wagiman *purrq* 'to slap thigh', Wardaman *purrma* 'to beat leg')

(949) **purrukulu* 'snake sp.' : Ngal *purrukulu*, Ngan *purrukulu*

(950) **purrunganti* 'turtle sp.' : D *purrunganti*, Ja *purrunganti*, BGW *purrunganti*, Ngan *purrungantiq* (Ritharrngu *purrungantiq*, Warndarrang *purrungantiny*)

(951) **purruppurru* 'scabies' : Ja *purruppurru*, BGW *purruppurru*, Ngal *purruppurru-yiq*, D *purruppurru*, R *purruppurruq* (Larrikiya *pörröppörrö*, Wagiman *purruppurru*)

(952) **purrupurruq* 'close' : Ngal *purrupurruq*, Ngan *purrupurruq*

(953) **purrurnpurrurn* : 'Cassytha filiformis' : BGW *purrurnpurrurn* ~ *purnpurn*, Ngan *purrurnpurrurn*, Nu *wurrurnpurrurn* (Ritharrngu *purrurnpurrurn*)

(954) **purrurtci* 'water python' : Ngal *purrurtci*, Ngan *purrurtci*, *?*Nu *arlca* (Ritharrngu *purrurtci*)

(955) **purt/lu* 'Xanthostemon paradoxus' : BGW *pulu*, W *purtu*

(956) **purta* 'plant sp.' : D *purta*, Ja *pura*

(957) **putca* ~ *purtca* 'armpit sweat' : D *putca*, Ja *purtca*, W *purtca*

(958) **putput* 'tree sp. – Brachychiton diversifolium' : D *putput*, Ja *putput*, BGW *-putput*, R *putput*, W *putput*

(959) **puy-* 'smell' : Ngan *puc-*, W *puy-*

(960) **puyppuy-* 'to singe' : Ngal *puyppuy-*, Ngan *puyppuy* (Ritharrngu *puyppi-*)

(961) **rak* 'camp' : Uw *rak*, *?* Ja *-luk* 'locative',*?*W *-lik* 'locative' (Kungarakany *lok*, Kamu *tak*, Malak-Malak *tek*, Matngele *tak*, Umbugarla *rak*, Wagiman *laq-an*, Wardaman *rlaklan*)

(962) **rakkalaq* 'paperbark' : D *rakkala*, Ngan *rakkalaq*, Nu *rakala*, R *rakkalaq* (Ritharrngu *rakalaq*)

(963) **rakul* 'red-eyed pigeon' : D *rakul*, Ja *rlawul*, BGW *rakul* (Wagiman *lakulin*)

(964) **rangem* 'male' : D *rangvm*, BGW *rangem*

(965) **rarrk-* 'to paint' : BGW *rarrk*, Ngal *rarrk-*, R *rarrk-*

(966) **rawoyq-* 'again' : D *rawoyq-*, BGW *yawoyq-*

(967) **ray* 'flesh' : Ja *rlay*, Ngal *ray*, R *re* (Wardaman *rlayin*)

(968) **rerr* 'camp' : Ja *rlerr* (*let- in compounds*), BGW *ret*, Ngal *rerre*, Ngan *rerr*, W *rle*

(969) **-retmV* 'tooth' : Ja *-rletmo*, BGW *-yitme*, W *-rletma* [In Mayali, there is a correspondence between initial /r/ in the eastern dialects and initial /y/ in the western dialects (Evans 2003). As Mayali does not otherwise show evidence of leniting initial /rl/, it appears most satisfactory to reconstruct this set with an initial /r/, which has /rl/ as its regular correspondent in Jawoyn and Warray (4.1, 4.7)]

(970) **ro(ng)-ma-* 'to dodge spears' : Ja *rlo-ma-*, BGW *ro-ma-*, R *rong-ma-*

(971) **rok* 'pandanus' : Ngal *rok*, Ngan *rok*

(972) **ro-ka-* 'to move' : D *ro-ka-*, BGW *ro-ka-* 'to wobble, to wiggle'

(973) **roqrok* : D *roqrok* 'level, even', BGW *roqrok* 'same'

(974) **rowk* 'all' : D *rowk*, BGW *rowk*

(975) **rul/rlk* 'scrub' : D *rulk*, Ja *rlurlk*, *?*R *rulk* 'grass [generic]'

(976) **rumuq* 'Torresian Imperial pigeon' : D *rumuq*, Ngan *rumuq*, Nu *rumurumuwa*

(977) **ruwurr* : Ngal *ruwurr* 'ridge', *?*Ngan *ruwurr* 'grass used in corroborees', R *ruwurr* 'blacksoil area'

(978) **T/rterpat/rt* 'kidney' : D *te(r)pat*, Ja *rterwat*, BGW *tepart*

(979) **-Tak* 'pelvis' : D *rakmo* 'hipbone', Ja *-rtak* 'anus', BGW *-tak* 'pelvis' ~ *rakmo* 'hipbone, pelvis', Nu *rtaak* 'hipbone', W *-rtek* 'anus, bottom'

(980) **Tal/rl-ka-* 'to float' : D *rtarl-ka-*, *?*Ja *rtarla-*, *?*R *rtolq-*, W *rtal-ka-*

(981) **Talak* 'sand goanna' : Ja *rtalak*, BGW *talak*

(982) **Talkkan* 'daytime' : M *talkan* (Wagiman *talkkan*, Wardaman *talkan*)

(983) **Talq-* 'to kick' : Ja *rtalq-*, M *rtal* 'to punch', *rtalq-* 'to tap, to strike', BGW *talq-*, (Wagiman *talq* 'to punch' Wardaman *talma* 'to punch')

(984) **Talq-* 'to pound' : Ja *rtalq-* (Wardaman *rtaltal*)

(985) **Tamtam* 'mushroom' : D *rtamtam*, Ja *rtamtam*, BGW *tamtam*,

(986) **Tangq-* 'to click tongue' : Ja *rtangq-*, M *rtangq-*, W *rtangq-* (Kamu *tangq-*, Jaminjung *tang*, Wagiman *tengq*, Wardaman *rtangmarla*)

(987) **Tany* 'spear type' : D *tany*, BGW *tany* [though these forms are strictly compatible also with **thany* , the obviously related form **Tany-pu-*, with Ja *rtany-pu-*, favours **Tany-*)

(988) **Tany-pu-* 'to spear' : D *rtany-pu-*, Ja *rtany-pu-*, BGW *tany-pu-*

(989) **Tanyq-* 'to cut' : *?*D *tac-*, Ja *rtanyq-*, *?*Ngal *tac-*, W *rtanyq-*

(990) **Tap-* 'to close' : D *tap-*, *?*BGW *taptap-* 'to close in on, to press in on', Ngan *thaa-rtap-* 'to close mouth' (Ritharrngu *rtap-* 'to be closed')

(991) **Tap-* 'to stick' : D *rtap-*, Ja *rtap-*

(992) **Tapi* 'block tobacco' : Ja *rtapi*, M *rtapi*

(993) **Tarawq* 'across' : M *rtarawq* (Wardaman *rtarawma*)

(994) **-Tark* 'white' : Ja *rtarq-* 'to be white', *pam-rterk* 'turtle with white and yellow head bands' [*pam* 'head' +**Tark* 'white'], *?*M *rtarq-* 'to shine', BGW *pam-rtek* 'turtle sp.', W *-rturk* 'white'

(995) **Tarlq-* 'to clap clapsticks' : W *rtarlq-* , Nu *rtar* (Kamu *tarlq-*, Wardaman *rtarl*)

(996) **Tarnrtamarra* 'lizard sp.' : Ja *rtarnrtamarr*, W *rtarnrtamarra*

(997) **Tarrapiya* 'black cockatoo' : Ngal *rtarrapiya*, Ngan *rtarrapiyaq*, R *tarrapiyaq* (Ritharrngu *rtarrapiyaq*)

(998) **Tarrarra* 'black-headed goanna' : D *tarrarra*, BGW *tarrarra*

(999) **Tarrin* 'phragmites' : M *rtarrin* 'spear point', Ngan *rtarrin*, W *rtarrin* (Kamu *tarrin* 'short spear', Marra, Wagiman, Warndarrang *rtarrin*)

(1000) **Tarta* 'honey' : Ngal *rtarta*, R *rtarta*

(1001) **-Tek* 'good' : Ja *-rlek*, W *-rtek* (only in compound *a-wang-rtek-ku* 'a good hunter')

(1002) **Tel/rrep/q-* 'to move' : BGW *terrep/q-*, Ngal *rteleq-*

(1003) **Teq-* 'to pinch' : Ja *wik-rteq-*, M *rtiq-ma-*

(1004) **Terqrter* 'strong' : Ngal *rterqrter*, Ngan *rterqrter*

(1005) **Terreneq* 'red apple' : Ngal *rterreneq*, Ngan *rterreneq*, R *rterreneq*

(1006) **Terreng-* 'to attach to' : Ja *rterreng-wo-* 'to attach to, to put on', W *rtirring-la-* 'to thread on'

(1007) **Terreq-* 'to crawl' : W *rtirriq-* (Wagiman *terre*, Wardaman *rterrema*)

(1008) **Terrqpa* 'to tie' : Ngal *rterrqpa-*, Ngan *rterrp-*

(1009) **Tetterran* 'plover' : M *rteterran*, W *rtetterren* (Kamu *tetterrempel*)

(1010) **Tettet ~ *Letlet* 'parrot sp.' : D *rtettet*, Ja *rtettet*, BGW *tettet*, Ngal *rletlet*, Ngan *rletlet*, W *rtenten* (Wardaman *rtenteniny*)

(1011) **Tew(o)(q)* 'white' : M *tewo-mayin*, (Wagiman *tewq*, Wardaman *tewoman*)

(1012) **Tewtew* 'dollar bird' : D *tewtewq* 'wood-swallow', Ja *rteworewo*, M *-rteworewan*, BGW *tewtew*, Ngan *rtewqtew* (Ritharrngu *rtiwqtiw*, Wardaman *reworewo*)

(1013) **Tickala(ng)* 'yam sp.' : D *rtickala*, ?BGW *tikkala*, Ja *rtickalang*

(1014) **Tickanku* 'yam sp.' : Ja *rtickanku*, BGW *tickanku*

(1015) **Tilk-* : Ja *tilk* 'sharp edge', BGW *tilk-* 'to carve'

(1016) **Tilq-* 'to paint' : D *rtilq-*, Ja *rtilq-*, M *rtil-*, BGW *tilq-*, W *rtilq-* (Wagiman *tilq*, Wardaman *rtilma*)

(1017) **Timin/nytimin/ny* 'fish sp.' : D *timinytiminy*, ?Ja *timinytiminy* 'water insect with long whiskers', BGW *timintimin*

(1018) **Tinirtini* 'cicada sp.' : D *rtinirtini*, Ja *rtinirtini*, BGW *tinirtini*

(1019) **Tiqtiri(ny)-* 'to itch' : Ja *rtiqtiri(ny)-*, W *rtiti-*

(1020) **Tirlkrtirlk* 'peewee' : Ngal *rtirlkrtirlk*, Ngan *rtirlkrtirlk*

(1021) **Tirnrtirn* 'holey' : Ja *-rtirnrtirn*, W *-rtintin*

(1022) **Tirringkil* 'tree sp.' : Ja *rtirringkil*, W *rlirringkil*

(1023) **Tirrp-* : Ja *rtirrp-* 'to be tight' (Wardaman *rtirrp* 'to get stuck')

(1024) **Tirt* 'moon' : D *tirt* 'moon snake', Ja *rtirt*, BGW *tirt*

(1025) **Tiwana* 'wedge-tailed eagle' : M *rtiwana* (Wagiman *tiwana*)

(1026) **To/uk* 'semen' : Ja *-rtok*, BGW *-tuk*

(1027) **Tolktolk-* 'to line up' : Ja *rtorlktorlk-*, Ngal *rtorlktorlk-*, Ngan *rtolktolk-*

(1028) **Tolom-pu-* 'to cover' : Ja *rtolom-pu-*, W *rtulum-pu-*

(1029) **Tolq-* : Ja *rtolq-* 'to break, to snap (tr)', W *rtulq-* 'to burst'

(1030) **Tong/ny* 'crooked' : M *tortony* (Wagiman *tong*, *Wardman tonyman*)

(1031) **Tonko* 'in a line' : M *tonko* (Wardaman *tonko*)

(1032) **Tor* 'heart' : Ja *-rtor* 'heart', ?M *-rtara* 'stomach', W *-rtoy* 'heart, viscera' [The Jawoyn and Warray forms are related. The relationship of the M form is uncertain; it may be related through the 'viscera' meaning.]

(1033) **Torok* 'tree sp.' : Ja *rtorok*, BGW *-torok*

(1034) **Torriya* 'rock wallaby' : Ja *rtorriya*, W *rtorriya*

(1035) **Torrokkorl* 'tree sp.' : D *rtorrokkorl*, Ja *rtorrokkorl*

(1036) **Torroq-* 'to dry up' : Ngal *rtorroq-*, Ngan *rtorroq-*

(1037) **Torrorrq-* 'to pull' : BGW *rtorrorr-*, Ngal *rtorrorrq-*, Ngan *rtorrorrq-*

(1038) **Tort* 'louse' : D *rtort*, Ja *rtort*, BGW *-tort*

(1039) **Tortoq-* 'to go down' : Ngal *rtortoq-*, Ngan *rtortoq-*

(1040) **Totoyq* : D 'MoMoMo', Ngal 'MoBrSoC'

(1041) **Totto* 'shallow' : D *rtotto*, Ja *rtotto*

(1042) **Towk-* 'to burst' : D *rtowk-*, Ja *rtowk-*, M *rtawk*, BGW *towk-* 'to go off [a gun]', R *rtow-* 'to go bang' (Wagiman *towk*)

(1043) **Tuk-* 'to tie' : D *tuk-*, BGW *tuk-*, Ngal *rtuk-*, Ngan *rtuk-*

(1044) **Tukpu* 'large mussel' : W *rtukpu ~ rtuppu* (Kamu *tuppu*, Wagiman *tukku*)

(1045) **Tukula* 'ring-tailed possum' : D *tukula*, BGW *rtukula*, Ngal *rtukulaq*, Ngan *rtukulaq*

(1046) **Tul* 'to lie down' : M *tulma* (Wagiman *tul*, Wardaman *tulma*)

(1047) **Tulq* 'branches used as camouflage' : D *tulq* 'tree', BGW *tulk* 'tree', Ngan *rtulq*, Nu *rtuul*, R *tulq* (Ritharrngu *rtuulq*)

(1048) **Tulq-* 'to burn' : Ja *rtulq-*, M *rtulq* 'to burn off', Ngal *rtulq-*, Ngan *rtulq-*

(1049) **Tulukkurr* 'bony bream' : Ja *rtulukkurr*, M *rtulukurr*

(1050) **-Tum* 'eye' : Ja *-rtum*, W *-rtum*

(1051) **Tum-ke(k)ka* 'asleep' : Ja *rtum-kekka*, W *rtumkika*

(1052) **Tum-mira* 'tears' : Ja *rtum-miri*, W *rtum-mila*

(1053) **Tum-pay(ngq)-* 'to open eye' : Ja *rtum-pay-*, W *rtum-pay(ng)q-*

(1054) **Tumurrq-* 'to snap' : Ngal *rtumurtumurrq-*, Ngan *rtumurrq-*

(1055) **Tun* ~ **Lun* 'cave' : D *rtun* 'hole', Ja *rtun*, W *rlun* (Wardaman *rluwun*)

(1056) **Tup-* 'to beat (of the heart)' : Ja *rtup-*, *?*M *rtuktuk-*, W *rtup-* (Kamu *tup-*, Jaminjung *tum*)

(1057) **Tup* 'to sit down' : W *rtup* (Wagiman *tup*, Wardaman *rtuba*)

(1058) **Tupal* 'Leichhardt tree' : Ngal *rtupal*, Ngan *rtupal*, R *rtupal* (Ritharrngu *rtuupal*, Warndarrang *rtupal*)

(1059) **Tuppun* 'hollow' : Ngan *rtuppun*, R *rtuppun* (Ritharrngu *rtupun*)

(1060) **Turic* 'bird sp.' : Ngal *rturic*, Ngan *rturic*

(1061) **Turn* 'string' : D *turn*, BGW *turn* 'cat's cradle', Ngal *rturn*

(1062) **Turq-* 'to sit' : Ngal *rturq-*, Ngan *rturq-*

(1063) **Turrp* 'to poke' : M *turrp* 'to prick' (Wagiman *turrp*, Wardaman *turrp*)

(1064) **Tuwat* 'small wallaby sp.' : Ja *rtuwat*, Ngal *rtuwat*

(1065) **th/campakku* 'tobacco' : BGW *campakku*, Ngal *campakku*, Ngan *thampakku*, Nu *thampa(a)ku*, R *tampakku* (Warndarrang *campaku*). This is a loan, from Makassar *tampako* [with a dental articulation to the *t*] or Bugis *campako* (see Evans (1992) for further Arnhem Land cognates), which accounts for its anomalous correspondence set.

(1066) **thakku* 'small' : Ngan *thakku*, R *takku*

(1067) **thakparrarraq* 'green tree frog' : Ngal *takparrarra*, Ngan *thakparrarraq*, Nu *thaparrarrak*

(1068) **-thala* 'mouth' : D *talv*, Ngal *-cala*, R *tala*, W *-cili* (*Warumungu cala*), *?*Ngan *-thaa*, *?*Nu *lha-* (*?*Ritharrngu *thaa*)

(1069) **thampur* 'sand' : Ngal *campur*, Ngan *thampur* (Ritharrngu *thampur*)

(1070) **thamq-* 'to block' : Ngal *camq-*, Ngan *thamq-*

(1071) **thamul(ng)* 'grass' : Ngan *thamulng* 'fodder', R *tamul*

(1072) **thangkiq* 'tree sp.' : Ngan *thangkiq*, Nu *lhangki*, R *tangkiq* (Ritharrngu *thangkiq*)

(1073) **thangku* 'meat' : Ngal *cangku*, Ngan *thangku*, Nu *lhangku*, R *tangku* (Ritharrngu *thaangku*)

(1074) **thantaq* 'tree' : Ngal *cantaq* 'stick', Ngan *thantaq*

(1075) **tharnrtiyaq* 'pandanus mat' : Ngal *carnrtiyaq*, Ngan *tharnrtiyaq*

(1076) **-tharr* 'thigh, leg (PPN **DHarra* 'thigh') : D *tarru*, Ja *-carr*, *?*M *catpa*, BGW *-tat*, *?*Ngal *carrppic*, *?*Ngan *tharrppic*, *?*Nu *lharrpic*, *?*R *tarrama*, W *-ce* (Kamu *cerri*, Malak-Malak *cet*, Matngele *cerri*, *?*Warndarrang *yarrpic*)

(1077) **thathaparngq* 'yesterday' : D *taparngq*, Ngal *cacaparngq*, Ngan *thathaparngq*, *?*R *taparrangq*

(1078) **thattam* 'waterlily' : D *tattam*, Ngal *cattam*, Ngan *thattam*, R *tattam* (Ritharrngu *thatam*)

(1079) **thawal* 'country' : Ngan *thawal*, Nu *lhaal*, R *tawal* (Ritharrngu *thawal*)

(1080) **thawaq* 'now' : Ngan *thawaq*, R *tawaq*

(1081) **thawarrak* 'beard' : D *tawarrak*, Ngan *-thawarrak*, Nu *thaarrak*, R *tawarrak* (Ritharrngu *thawarrak*). The Nu form is unexpected — the regular reflex would be **-lhaarrak* — and may be influenced by the Ritharrngu form.

(1082) **thaworro* 'clan' : D *thaworro*, Ngal *caworro*, R *taworro*

(1083) **thele* 'urine' : BGW *-tile*, Ngal *cele*, R *cala*

(1084) **thelng* 'tongue' : Ngal *celng*, Ngan *thelng*, R *tiyalng* (Ritharrngu *thiilng*, ?Warndarrang *nciyilng*)

(1085) **thenge* 'foot' : D *tengv*, BGW *-tenge*, Ngan *theng*, R *canga* (Wardaman *ceng*). The R form here is aberrant — would expect *tengv*.

(1086) **thingq* 'woman' : Ngan *thingq*, R *tingq* (Ritharrngu *thingq*)

(1087) **thiw* 'liver (PPN *DHiba*)' : BGW *-tiw*, Ngal *-ciwi*, Ngan *-thiw*, Uw *-ti*, W *-ci*

(1088) **thom-pu-* 'to extinguish' : BGW *tom-pu-*, W *cum-pu-*

(1089) **thorrowq* 'quinine bush' : Ngal *corrowq*, Ngan *thorrowq*, ?Nu *lharrak*, R *torroq* (Ritharrngu *tharrawq*)

(1090) **thoy* 'father-in-law' : BGW *-toy*, Ngal *coy*, Ngan *rongthoy*

(1091) **thukkul* 'Acacia holosericea' : Ngal *cukkul*, Ngan *thukkul*, Nu *wuthukul* (Ritharrngu *thukul*, Warndarrang *cukul*)

(1092) **thulu* 'corroboree' : D *tulu*, BGW *tule*, Ngal *culu-we* 'to sing', Ngan *-thulu*, R *tulu*

(1093) **thumpi* 'Long Tom fish' : D *thumpi*, Ngan *thumpi*, R *tumpi*

(1094) **thumu* 'waist' : Ngal *cumu* 'hipbone', Ngan *thumu*, Nu *lhumu*, R *tumu* 'small of back'

(1095) **thumuk* : Ja *cumuk* 'Canthium attenuatum', BGW *tumuk* 'Exocarpus latifolius'

(1096) **thumurluk* 'bloodwood' : Ngal *rtumurluq*, Ngan *thumurluq*, Nu *lhumurluk*, R *tumurluq* (Ritharrngu *thumurluq*)

(1097) **thungkaq* 'bandicoot' : Ngan *thungkaq*, R *tungkaq* (Ritharrngu *thungkaq*)

(1098) **T(h)apparr* 'pigeon sp.' : D *tapparr*, R *tapparr*

(1099) **T(h)apu* 'egg' : D *tapu*, BGW *tapu*

(1100) **T(h)atpe* 'king brown' : D *tatpu*, BGW *tatpe*, R *tatpa*

(1101) **T(h)ayarr* 'pandanus' : D *tayarr*, BGW *tayarr*, R *tayarr*

(1102) **T(h)elek* 'white ochre' : D *telek*, BGW *telek*

(1103) **T(h)ettel* 'ant sp.' : D *tettel*, BGW *tettel*

(1104) **T(h)olppo* 'fish sp.' : D *tolppo*, BGW *tolppo*

(1105) **T(h)ulum* 'hill' : D *tulum*, BGW *tulum*

(1106) **T(h)ulu-pu-* 'to spear' : D *tulu-pu-*, BGW *tulu-pu-*

(1107) **T(h)umtum* 'beetle sp.' : D *tumtum*, BGW *tumtum*

(1108) **-T(h)uniny* 'really' : D *-tuniny*, BGW *-tuniny*

(1109) **wa(t)ta* 'camp' : D *watta*, Ja *wota*, BGW *watta*

(1110) **wac-* 'both' : Ngal *wac-*, Ngan *woc-*

(1111) **waccurnrtu* 'goanna sp.' : Ngal *waccurnrtu*, Ngan *waccurnrtu* (Ritharrngu *wacurnrtu*)

(1112) **waciwaci* 'wrong marriage' : M *waciwaci* (Wardaman *waciwaci*)

(1113) **wak* 'water' : D *waq*, Ja *wak*, Ngal *weq*, Uw *yik*, W *wik* (Kamu *wuk*, Malak-Malak *wak*, Matngele *wuk*, Wagiman *waq-an*)

(1114) **wakkic* 'fishing line' : D *wakkic*, BGW *wakkic* (Gaagudju *waakic*)

(1115) **wakwak* 'crow' : D *wakwak*, Ja *wakwak*, BGW *wakwak*, R *waqwaq*

(1116) **wal* 'smoke' : Ngal *wol*, W *wa/ol*

(1117) **-walak* 'hot' : Ja *-wolawolak*, W *-wa/olak*

(1118) **walam* 'south' : D *walvm*, Ja *walam*, Ngal *walam*, BGW *walem* 'west', R *walam*, W *wala/em*

(1119) **walama* 'forehead' : BGW *walama*, Ngal *walama*

(1120) **walapi* 'fishnet' : Ja *walapi*, BGW *walapi*

(1121) **walk* 'little' : Ja *walk* '(woman's) child', *walkwalk* 'little', BGW *walk* 'boy in ritual seclusion before initiation', W *-wak* ~ *-weykweyk* 'little' (Kungarakany *-wekwek* 'little')

(1122) **walngq-* 'to hang' : W *walngq-* (Kamu *wulng*, Wagiman *wolngq*)

(1123) **walppurrungku* 'bustard' : D *walppurrungku*, Nu *walpurrungku*, R *walppurrungku*

(1124) **walqwal-* 'to fly away' : D *walqwalq-*, Ja *walqwal*, R *walqwalq-*

(1125) **walwalngurru* 'lizard sp.' : D *walwalngurru*, BGW *alwalngurru*

(1126) **wam* 'honey' : Ja *wam*, M *wap*

(1127) **wamarra* 'turtle' : D *wamarra*, R *wamarra*

(1128) **wanarr* 'wallaby sp.' : Ngal *wanarr*, Ngan *wanarr*

(1129) **wang* 'meat' : Ja *wang*, W *wang*

(1130) **wanga/erre-* 'to half-cook' : Ja *wangarre-*, Ngal *wangerre-*

(1131) **wangkinyq* 'one' : Ngal *wangkinyq*, Ngan *wangkinyq* (Dhuwal *wangkanyq*, Warndarrang *wangkiny*)

(1132) **wangpol* 'sorcery objects' : M *wangpol*, BGW *wangpol*, R *wangpol*

(1133) **-wany* 'armpit' : D *wany*, *?*Ja *-wanycal*, BGW *-wany*, Ngal *wanykol*, Ngan *-wany(kol)*, R *wany*,*?*W *-wanymili* (Kungarakany *-weny*)

(1134) **wany* 'like that' : Ja *winy* ~ *yiny*, BGW *wanyq* 'all right, and then', W *wany*

(1135) **-wanykiq* 'like' : D *-wanykiq*, BGW *wanykiq* 'just like', Ngan *-qwanyciq* (Ritharrngu *-qwanyciq*)

(1136) **waral* 'spirit' : Ja *waral*, BGW *waral*, Ngal *waral*, Ngan *waral* (Marra *waral*)

(1137) **waran* 'snake sp.' : D *na-waran* 'python sp.', Ja *na-waran* 'python sp.', M *waran* 'desert snake sp.', BGW *na-waran* 'python sp.', R *na-waran*

(1138) **warawat* 'to travel' : M *warawat* (Wardaman *warawat*)

(1139) **ware* : BGW *ware* 'someone owing a debt to opposite moiety, initiate to ceremony', Ngal *ware* 'connotes protective relation between cross-cousins' — approximately 'guardian"

(1140) **warl(k)-* 'to hide' : BGW *warl(k)-*, D *warl-*, W *warl-*

(1141) **warlan* 'tree sp.' : D *warlan*, Ja *warlan*, Ngal *warlanq*, Ngan *warlanq*, Nu *warlan* (Marra *warlan*, Ritharrngu *warlanq*, Wardaman *warlanin*, Warndarrang *warlan*)

(1142) **warlang* 'bat sp.' : Ja *warlang*, M *warlang*, BGW *warlang* (Wagiman *warlang*, Wardaman *warlang*)

(1143) **warlaq* 'wide' : D *warlaq*, BGW *warlaq*

(1144) **warlarrk-* 'to wash' : Ja *warlarrk-*, M *warlakwarlak-*, W *wurlek-*

(1145) **warlat-pu* 'to cook in ashes' : Ngal *warlat-pu*, Ngan *warlat-pu* (Ritharrngu *warlat-pu*)

(1146) **warling* 'initiate' : M *warling* (Wardaman *warling*)

(1147) **warlirr* 'hot weather' : D *warlirr*, Ngal *warlirr*, Ngan *warlirr*, Nu *arlirr*, R *warlirr* (Ritharrngu *warlirr*)

(1148) **warlk-* 'to enter' : *?*D *warlk-* 'to hide', *?*BGW *warlk-* 'to hide', Ngal *warlk-*, Ngan *warlk-*

(1149) **warlkkarra* 'fish sp.' : D *walkkarra*, Ngal *warlkkarra*, Ngan *warlkkarra*, Nu *warlkarra* (Ritharrngu *warlkarra*)

(1150) **warlmu/orr* : Ngal *warlmorr* 'elbow', Ngan *warlmurr* 'feather, wing'

(1151) **warlng* 'to open' : M *warlng* (Wardaman *warlng*)

(1152) **warlppurr* 'pubic tassle' : Ja *warlppurr*, BGW *warlppurr*, W *warlppe* (Kamu *warlppurr*)

(1153) **warluk-* 'to go around' : D *warluk-*, Ngal *warluk*

(1154) **warnpek* 'vine sp. - Cynanchum pedunculatum' : W *warnpek* [*warnperrk* in place name] (Wagiman *warnpik*)

(1155) **warnrta* 'track' : Ngan *warnrta*, R *warnrta*

(1156) **warnwarn* 'tree sp.' : D *warnwarn*, Ja *warnwarn*, Ngal *warnwarn*, Ngan *warnwarn*

(1157) **warow-* 'to toss' : Ja *warow-* 'to toss', BGW *warow-* 'to swing out',

(1158) **war-pu-* 'to sing (tr)' : Ja *war-wu-*, BGW *wa-pu-*, Ngal *war-pu-*, Ngan *war-pu-*, R *war-pu-* (Ritharrngu *war-pu-*)

(1159) **warr-* 'to swim' : D *warr-*, Ja *warr-*, Ngan *worr-*, R *warr-*

(1160) **warr(a)* 'bad' : BGW *-warre*, Uw *-warr*, W *-warr* (Larrikiya *-warra*)

(1161) **warracan* 'turtle sp.' : D *warracan*, Ja *warrayan*, BGW *warracan*

(1162) **warrarlarla* 'leaves for rubbing corpse' : Ja *warrarlarla*, BGW *warrarlarla*

(1163) **warrarra* 'plain' : Ngal *warrarra*, Ngan *warrarra* (Ritharrngu *warrarra*)

(1164) **warrawarra* 'fighting stick' : W *warrawarra* (Kungarakany *warrawarra*, Kamu *warrawarra*)

(1165) **warrcaq-* 'to walkabout' : Ngal *warrcaq-*, Ngan *warrcaq-* (Ritharrngu *warrcaq-*)

(1166) **warri* 'child' : W *warri* (Wagiman *warren/warri-*, Wardaman *wurren*)

(1167) **warri-* 'to go bad' : Uw *warri-*, W *warri-*

(1168) **warrikku* : Ngan *warrikku* 'now', R *warrikku* 'quickly'

(1169) **warrinycalan* 'plant sp.' : M *warrinycalan* 'Exocarpus latifolus' (Wardaman *warrinycalan* 'lemon grass')

(1170) **warrirtila* 'boomerang' : M *warrirtila*, Ngal *warrirtila*, Ngan *warrirtila* (Jaminjung, Wardaman, Warndarrang *warrirtila*)

(1171) **warrkcirt* 'butcherbird' : D *warrkcirt*, BGW *warrkcirt*

(1172) **warrkwarrk* 'ant sp.' : D *warrkwarrk*, Ja *warrkwarrk*, Ngan *warrkwarrk* (Ritharrngu *warrkwarrk*)

(1173) **warrmpaya* 'anyway' : Ngal *warrmpaya*, Ngan *warrmpaya* (Ritharrngu *warrmpaya*)

(1174) **warrp* 'to be many' : M *warrp* (Wagiman *warrp*, Wardaman *warrpa*)

(1175) **warrp-* 'to tell a lie' : Ja *warrp-*, M *warrp* 'to make a mistake', Ngal *warrp-*

(1176) **warrq-* 'to lift' : Ja *warrq-*, *?*R *warrq-* 'to throw, to discard', W *warrq-*

(1177) **wartap-* 'to sift' : Ja *wartap-* (Wardaman *wartapa*)

(1178) **wartapic* 'tree sp.' : D *wartapic*, Ja *warawic*, W *warapic*

(1179) **wart-pu-* 'to skin' : Ja *wart-pu-*, W *wart-pu-*

(1180) **wat-* 'to finish' : Ja *wat-*, BGW *wat-*, Ngal *wat-*

(1181) **watpar* 'Grevillea pteridifolia' : Ngan *watpar*, Nu *(w)atpar*, R *watpar* (Ritharrngu *watpar*, Warndarrang *watpar*)

(1182) **way(q)-* '?to move a body part' : Ja *way-* 'to jawn', BGW *way-* 'to wave', W *napat-wayq-* [hand-?move] 'to wave', *cili-wayq-* [mouth-?move] 'to yawn'

(1183) **wayalq-* 'to light a fire' : Ja *wayalq-*, BGW *wayalq-*

(1184) **-wayen* 'temporal suffix' : Ja *-wayen*, W *-wayin*

(1185) **wayini-* 'to sing' : D *wayini-*, BGW *wayini-*

(1186) **waykkan* 'high' : Ja *waykkan*, M *waykan*, W *waykkan*

(1187) **wayq-* 'to lift' : BGW *wayq-*, W *wayq-*

(1188) **waywo* 'and all' : Ja *waywo*, Ngal *waywo*

(1189) **way-yi-* 'to fall' : Ja *wa-yi-*, M *way-(y)i-*

(1190) **wecci* 'MM' : W *wecci* (Kungarakany *wecci*)

(1191) **wel* 'wing' : D *wel*, Ja *wel*, BGW *wel*, Ngal *wel*

(1192) **wel/rrec/y* 'parrot sp.' : D *weleyq*, Ja *weley*, BGW *weleyq*, Ngan *werreywerrey*, R *weleyq* (Wagiman *werrec-werrec*, Wardaman *welecpan*)

(1193) **welang* 'successful hunter' : Ja *welang*, BGW *weleng*, Ngal *weleng*

(1194) **welek-* 'to swallow' : Ja *welek-*, M *wirlik*, W *wilik-*

(1195) **welkmo* 'firestick' : Ja *welkmo*, W *wekmu*

(1196) **werec* 'rainbow fish' : D *werec*, Ja *werec*, Ngan *werec*, R *werec* (Ritharrngu *wiric*)

(1197) **werq-* 'to vomit' : Ja *werq-*, BGW *we(r)q-*, Ngal *werq-*, Ngan *werq-*, W *weq-* (Wagiman *we*, Wardaman *we-mi-yi-*)

(1198) **werreny-pu-* 'to sing (tr)' : W *wirriny-pu-* (Wagiman *werriny-pu-*, Wardaman *werreny-pu-*)

(1199) **werrk* 'bark' : D *werrq*, BGW *werrk*

(1200) **werrkwerrk* 'white' : Ja *-werrkwerrk*, Uw *-perrkperrk* (Kungarakany *werrkwerrkma*) [The Kungarakany and Jawoyn forms are related. They could derive by lenition from the Uwinymil form. However initial lenition is not otherwise characteristic of Kungarakany or Jawoyn]

(1201) **wetperr* 'yam sp.' : W *witpe* (Kungarakany *wetperr*)

(1202) **-wik* 'skin' : Ja *-wik*, W *-wik*

(1203) **wikwik* 'bird sp.' : D *wikwik*, BGW *wikwik*

(1204) **wilk-* 'to take out' : D *wilk-*, BGW *wilk-*

(1205) **-winyku* 'freshwater' : D *-winyku*, BGW *-winyku*

(1206) **wirik* 'possum' : Ja *wirk*, BGW *wi/urik*

(1207) **-wirlang* : Ja *-wirlang* 'hard, strong', W *-wirlang* 'narrow'

(1208) **wirliqwirliq* 'bird sp.' : D *wirliqwirliq*, BGW *wirliqwirliq*

(1209) **wirlmurr* 'wire spear' : D *wirlmurr*, M *wirlmurr*, Ngal *wirlmurr*, Ngan *wirlmurr* (Ritharrngu, Wagiman, Wardaman, Warndarrang *wirlmurr*)

(1210) **wirni* 'turtle sp.' : Ngal *wirni*, Ngan *wirni*

(1211) **wirnwirn* 'bird sp.' : BGW *wirnwirnq*, Ngan *wirnwirnq*, W *wirnwirnmi*

(1212) **-wirra/ung* 'different' : Ja *-wirrung*, W *-wirrang*

(1213) **wirriciq* : Ngal *wirriciq* 'long, ceremony', Ngan *wirriciq* 'dreaming' (Ritharrngu *wirrciq*)

(1214) **wirriny* 'to turn' : M *wirriny*,?W *wirrinyq-* 'to walk around' (Wagiman *wirriny*, Wardaman *wirrinyma*)

(1215) **wirriq-* 'to remove' : Ngal *wirriq-*, Ngan *wirriq-*

(1216) **wirritwirrit* 'bird sp.' : Ja *wirritwirrit* 'kingfisher', M *wirrirtwirrirt* 'whip birds', W *wirritwirrit* 'rainbow bee-eater' (Wagiman *wirritwirrit* 'rainbow bee eater', Wardaman *wirritwirrit* 'rainbow bird')

(1217) **wirriwirriyak* 'black-faced cuckoo shrike' : Ja *wirrwiyak*, BGW *wirriwirriyak*

(1218) **-wirru* 'properly' : Ja *-wirr*, W *-wirru*

(1219) **wirrwirr-* 'to go red (of sunset)' : D *wirrwirr-*, Ja *wirrwirr-*

(1220) **wirt-* 'to whistle' : ?D *wirtiwirt-*, Ja *wirt-*, BGW *wic-*, Ngal *wirq-*, Ngan *wirq-*, W *wirt-* [rare variant *wirn-*] (Kamu *wit*, Jaminjung *wit*, Wagiman *wirn*, Wardaman *wit*)

(1221) **wirtu* 'plant sp.' : D *wirtu*, BGW *wirtu*

(1222) **witi(ny)witi(ny)-* 'to wag tail' : W *witiwiti-* (Wardaman *witinywitinyma*)

(1223) **woc* 'log' : D *woc*, BGW *woc*

(1224) **woc-* 'to steal' : Ja *woc-*, Ngal *woc-*, *?*R *woc-* 'to hurry'

(1225) **woccal* 'lungs' : D *woccal*, Ja *woccal*, Ngal *woccal*

(1226) **wolerrk* 'female euro' : D *wolerrk*, BGW *wolerrk*

(1227) **wompan* 'lightweight' : D *wompan*, Ja *wompanwompan*, R *wompan*

(1228) **-won* 'female' : Ja *-won*, W *-wun*

(1229) **wonga-* 'to leave' : Ja *wonga-*, W *wunga-* (Jaminjung *wunga-*)

(1230) **wor(c)* 'urine' : Ja *wor*, Ngan *worc*, W *wurl* (Kungarakany *wurey*, Kamu *wurey*, Marra *warc* 'to urinate')

(1231) **wor(o)cwor(o)c* 'cockroach' : D *worocworoc*, Ngan *worcworc* (Ritharrngu *warcwarc*)

(1232) **worrongomolo* 'grass sp.' : Ngal *worrongomoloq*, R *worromongolo*

(1233) **worrorlorl* 'blowfly' : D *worrorlorl*, Ngal *worrorlorl*, Ngan *worrorlorl* (Ritharrngu *wurrurlurl*)

(1234) **worrowk-* 'to jump' : D *worowk-*, Ja *worrowk-*, BGW *worrowkworrowk-*, Ngal *worrowk-*, Ngan *worrok-*, R *worrowk-*

(1235) **worrq* 'belly' : *?*D *worrq-* 'to be full', *?*BGW *worrq* 'fullness', Ngal *worrq*, Ngan *worrq*

(1236) **worrumpok-ka-* 'to chase' : Ja *worrompok-ka-*, BGW *worrumpok-ka-*

(1237) **woyk-* 'to fish' : *?*D *woy-*, Ja *woyk-*, Ngal *woyk-*, Ngan *woyk-*

(1238) **woyqwoy-* 'to dive in' : D *woyqwoyq-*, Ja *woyqwoy-*

(1239) **wucal* 'black plum' : Ja *woyal*, R *wucal*, W *wucal*

(1240) **wukkara* 'frog sp.' : Ngal *wukkara*, Ngan *wukkara* (Ritharrngu *wukara*)

(1241) **wul/rlup-* 'to bathe' : BGW *wulep-*, Ngal *wulup-*, Ngan *wurlup-*

(1242) **wulkan* 'sibling' : D *wulkun* 'younger sibling', W *-wulkan*

(1243) **wulung-munguyq* 'all the time' : D *wulung-munguyq*, Ngan *wulung-munguyq*, R *wulung-munguyq*

(1244) **wumpu* 'possum sp.' : D *wumpu*, BGW *wumpu*

(1245) **wungurr* 'shadow' : D *wungurr*, BGW *wungurr*

(1246) **wurlq-* 'to burn' : D *wurlq-*, BGW *wurlq-*

(1247) **wurr* 'belly' : D *wurr*, BGW *wurr-*

(1248) **wurr-* 'to be noisy' : D *wurr-*, BGW *wurr-*, W *wurr-* 'to deafen' (Wagiman *worr* 'to be deaf')

(1249) **-wurray* : Ja *-wurray* 'desert', M *-wurray* 'black soil plain'

(1250) **wurrk* 'bushfire' : Ja *wurrk* 'fire', BGW *wurrk*, Ngan *wurrk*, Nu *wurrk*, R *wurrk*, W *wek* 'fire' (Ritharrngu *wurrk*, Warndarrang *wurrkmalan*)

(1251) **wurrqwurrungu* 'old people' : D *wurrqwurrungu*, Ngal *wurrqwurrungu*, Ngan *wurrqwurrungu*, R *wurrqwurrungu*

(1252) **wurrwurr* : Ja *wurrwurr-* 'to shake', BGW *wurrwurr-* 'to feel giddy',

(1253) **wurt* 'child' : D *wurt* 'mSiC' *wurtwurt* 'children', BGW *wurt* 'womb' *wurtwurt* 'children'

(1254) **wutpa* 'catfish sp.' : D *wutpa*, Ja *wutpa*, *?*M *warrpa* 'catfish generic, also small catfish sp.', W *wutpa*

(1255) **-wuyang* 'hungry' : Uw *-wuyang*, W *-wuyang*

(1256) **yacang* 'went' : Uw *yateng*, W *yaciny* (Kungarakany *yocong*)

(1257) **yakki* 'nothing' : D *yakkv*, BGW *ka-yakki*

(1258) **yakko* 'dillybag' : Ja *yakko*, BGW *yakko*

(1259) **yakngarra* 'pandanus' : D *yakngarra*, BGW *yakngarra*

(1260) **yalang* 'termite' : D *yalang*, Ja *yalang*, *?*W *yarle*

(1261) **yalpuyalpu* 'turtle sp.' : D *yalpuyalpu*, Ngal *yalpuyalpu*, Ngan *yalpuyalpu* (Ritharrngu *yalpuyalpu*)
(1262) **ya-ma-* 'to spear' : D *ya-mi-*, Ja *ya-ma-*, BGW *ya-me-*
(1263) **yama/errk* 'tooth' : D *yamarrk*, Uw *yamerrk*
(1264) **yamic* 'grasshopper sp.' : Ja *yimicmi*, BGW *yamic*
(1265) **-yan* 'collective' : Ja *-yan*, M *-yan*
(1266) **yang* 'language' : D *yang*, Ngal *yang*, Ngan *yang*, Nu *yaang*
(1267) **yapok* 'sister' : D *yapok*, BGW *yapok*
(1268) **yappanq* 'two' : D *yappvnq*, Ngal *yappanq*, Ngan *yappanq*
(1269) **-yarkyark* 'rubbish' : Ja *-yarkyark*, Ngal *-yarkyark*
(1270) **yarlarr-* 'to disperse' : D *yarlarr-*, Ja *yarlarr-*, BGW *yarlarr-*, Ngal *yarlarr-*, Ngan *yarlarr-*
(1271) **-yarlk* 'bee sp.' : D *yalk*, Ja *-yarlk*, BGW *-yalk*
(1272) **yarlkkic* 'dillybag' : Ja *yarlkkic*, Ngal *yarlkkic*
(1273) **yarlqyarl-* : Ja *yarlqyarl-* 'to scurry, to scuttle', M *yarlqyarl-* 'to follow behind, to hop like a kangaroo'
(1274) **yarr* 'yabby' : D *yat*, Ja *yarr*, BGW *yat*
(1275) **yarra/inti* 'song style' : Ja *yarranti*, W *yarrinti* (Kamu, Matngele, Wagiman *yarrinti*)
(1276) **yarracan* 'tree sp.' : W *w/yarracan* (Wagiman *yarracan*, Wardaman *yarrayan*)
(1277) **yaw-* 'child' : D *yaw-*, BGW *yaw-*
(1278) **yaw* 'exclamation' : Ngal *yaw*, Ngan *yaw*
(1279) **yawarr-* 'to rustle' : W *yawarr-* (Kamu *yawar*, *?*Wagiman *yarrq-*)
(1280) **yawk* 'girl' : D *yawk*, BGW *yawk*
(1281) **yawok* 'yam sp.' : Ja *yawk*, BGW *yawok*, D *yawok*, Ngal *yawok*, W *yawuk*
(1282) **yawurral* 'snake sp.' : D *yawurral*, BGW *yawurral*
(1283) **yawurriny* 'young man' : D *yawurriny*, Ja *yawurriny*, BGW *yawurriny*
(1284) **yay-* 'to itch' : D *yay-*, Ja *yay-*, BGW *yay-*
(1285) **yekke* 'cold weather' : D *yekkv*, BGW *yekke*
(1286) **-yel* : Ja *-yil* 'large muscle on leg', W *-yel* 'flesh'
(1287) **yele* 'hole' : Ngal *yele*, Ngan *yele*
(1288) **yelek* : D *yelek* 'yet', R *yelek* 'slow'
(1289) **yenyenq* 'termite' : D *yenyenq*, BGW *yenyenq*
(1290) **yer-* 'to be ashamed' : D *yer-*, BGW *ye-*, Ngal *yer-*
(1291) **yerr/riny* 'bird sp.' : Ja *yerriny* 'mopoke', BGW *yeriny* 'kite'
(1292) **yerrel* 'armlets' : Ja *yerrel*, W *yerrel* (*?*Jaminjung *yirrin*, Wagiman *yerrel*, Wardaman *yerrel*)
(1293) **yi-ka-* 'to pick up' : D *yi-ka-*, BGW *yi-ka-*
(1294) **yilk* : Ja *-yilk* 'gumption', BGW *yilk-mak* 'happy', *?*W *-yik* 'alive'
(1295) **yilyil-* 'to have a tickle in the throat' : W *yilyil-* (Kamu *yilyil-*, Matngele *yirryirr-*)
(1296) **yip-* 'to set' : D *yip-*, Ja *yip-*, BGW *yip-*, R *yip-*
(1297) **yipalirr* 'dillybag' : Ja *yipalirr*, BGW *yiparlirr*
(1298) **yipitcipit* 'eyebrow' : M *yipitcipitci* (Wagiman *yipitcipit*, Wardaman *yi-mum-picipitcip*)
(1299) **yira* 'poison song' : Ja *yira*, M *yira*
(1300) **yirr-* 'to strip off' : Ja *yirr-*, M *yirr-*
(1301) **yirramparn* 'owl sp.' : Ja *yirramparn*, Ngal *yirramparn*

(1302) **yirriny-ka-* : D *yirriny-ka-* 'to pull', Ja *yirriny-ka-* 'to drag'

(1303) **yirrkkup* 'water rat' : Ngal *yirrkkup*, Ngan *yirrkkuq*

(1304) **yirrppiny* 'tree sp.' : D *yirrppiny*, BGW *yirrppiny*

(1305) **yirrq- to pull'* : Ja *yirrq-*, M *yirrq*, W *yirrq-* (Jaminjung *yirr* 'to drag', Wardaman *yirr*)

(1306) **yoc-* 'to go a long way' : Ja *yoc-*, W *yuc-*

(1307) **yolkyolk-* : Ja *yolk(yolk)- to converse'*, Ngal *yolkyolk-* 'to narrate, tell', Ngan *yolkyolk-* 'to recount', R *yolkyolk* 'to tell a story'

(1308) **yolq* 'feeling' : D *yolq-* 'to dislike', BGW *yolq*

(1309) **yolyol-* 'to talk' : D *yolyol-* 'to tell', BGW *yolyol-* 'to talk about', R *yolyol-* 'to talk'

(1310) **-yon* 'tendon' : D *yon*, Ja *-yon*, BGW *-yon*, Ngal *-yon*

(1311) **yony* 'ground' : Ja *yony* 'ground', BGW *-yony* 'country

(1312) **yorn-* 'to talk about' : Ja *yorn-*, Ngal *yorn-*, R *yorn-*, W *yurn-* (Kamu *yurn*, Wagiman *yurn*)

(1313) **yungkay* 'ahead, front': Ja *yungkay*, *?*M *yungkun*, BGW *yungki* , Ngal *yukka*, W *yungay*

(1314) **yurr* : Ja *ngalyurr* 'lightning', BGW *ngalyurr* 'Leichhardt's grasshopper [seen in wet season]' (Umbugarla *yurr* 'rain')

(1315) **yurr-* 'to share' : Ja *yurr-* 'to share', BGW *yurrmi-wo-* 'to swap'

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9 *Dalabon verb conjugations*

NICHOLAS EVANS AND FRANCESCA MERLAN

1 Introduction

Conjugational patterns in tense/aspect/mood suffixes are a major source of comparative evidence in Australian languages (see Alpher, Evans & Harvey this volume). Although Capell (1962:115–120) gives some preliminary information about the Dalabon system, this is incomplete in its coverage of conjugations, and is phonetically inaccurate in places. For example, he fails to hear final palatal nasals after high front vowels, transcribing /yoɲɟɲ/ as 'joɲin' (1962:116). No information on Dalabon conjugations has since been published, although a number of unpublished manuscripts (Alpher 1976; Merlan n.d.) give data or partial treatments. The discussions of the harmonic/disharmonic distinction on pronominal prefixes to the verb in Alpher (1982), and on the structure of the transitive paradigm in Evans, Brown and Corbett (2001), both contain a number of example sentences. The purpose of this paper is therefore to make a full statement of the conjugational system publicly available. Our discussion of the fuller system of verbal morphology, and of the semantics of the TAM suffixes, is brief, since a full grammar is currently in preparation.

2 Genetic and areal position

Dalabon (also known as Dangbon, Ngalkbun and Buwan[1]) is a member of the Gunwinyguan language family and is most closely related to the dialect chain containing Kunwinjku, Mayali and Kune, now known by the cover term Bininj Gun-wok (see Alpher,

[1] Dalabon has the etymology *dalû-* 'mouth' plus *bon* 'go', i.e. people in whose mouth (language) one says *bon* for 'go'. Dangbon and Ngalkbon are parallel formations based on the root for 'mouth' in Bininj Gun-wok and Jawoyn, i.e. *kun-dang* and *ngan-ngalk* respectively (*kun-* and *ngan-* are noun class prefixes). The term Dangbon tends to be used by speakers of Bininj Gun-wok, and Ngalkbon by speakers of Jawoyn, but the terms are also used by Dalabon speakers themselves on the basis of which other language group they most regularly have dealings with. Buwan tends to be used on the Rembarrnga side; it may reflect 'unpacking' of *o* in *bon* to *uwa*, a process attested elsewhere in Rembarrnga (see Harvey this volume, Chapter 8).

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Canberra: Pacific Linguistics, 2003.

Evans & Harvey this volume). Complicating the genetic picture is evidence of typological and lexical convergence with its eastern neighbour, Rembarrnga, which is also a Gunwinyguan language but belongs to a separate subgroup, being most closely related to Ngalakan. The three most striking typological features shared by Dalabon and Rembarrnga are

(a) The innovation of a sixth vowel phoneme, basically a high central vowel. This is written *û* in the practical orthography used here.[2] Though the conditions under which this developed in Dalabon are presently far from understood, there are examples of it developing from the vowels *i*, *e* and (rarely) *o*, with *e* being the commonest source. In fact, all verbs with final-syllable *e* in Bininj Gun-wok have changed this to *û* in Dalabon (e.g. *yamûng*[3] 'spear-PP'; cf. BW *yameng*; or the present form of thematic *-mû*, matching BGW *-me*); the only exceptions are where the BGW vowel has actually been lost (this is restricted to exposed final position after palatal nasals, e.g. BGW *kinje* 'cook-NPST', D *kinj* 'cook-PRES') and in the verb *name* and its derivatives (BGW *name* 'make, put-NPST', D *nam* 'put-PRES'). Examples from outside the verbal domain are Mayali *kun-yid* 'fight, trouble', D *yûrrû* 'cheeky', Mayali *an-karre* 'song', D *karrû-no*; Mayali *-ken* 'GENitive', D *-kûn*, Mayali *dadbe* 'dangerous snake', D *dadbû*, Kune *morné-no*, D *mûrni-no*. Some Dalabon speakers have gone on to merge this phoneme with *u*, so that the present form for 'swim' is *wurlebmû* for some speakers and *wurlebmu* for others (cf. BGW *wurlebme*).

(b) Loss of the Proto Gunwinyguan gender system, still preserved by Dalabon's closest relative, Bininj Gun-wok, and Rembarrnga's closest relative, Ngalakan, except in a few paired male/female terms which retain the *na-/ngal-* masculine/feminine contrast found in Bininj Gun-wok. The prefixes found in other dialects are simply dropped — cf. Kune *man-ngohngo* 'pandanus basedowii', D *ngohngo*.

(c) The development of a system of 'possessed noun' marking on such part nouns as body parts, parts of the landscape, and times of the day, e.g. *dje-no* [nose-3POSS] 'his/her/its nose', *dje-ngan* 'my nose'.

The latter two developments have begun to spread to the Kune dialect of Bininj Gun-wok, under the influence of traditional bilingualism between Kune and Dalabon — see Evans (1997, 2003).

3 Verbal structure

Dalabon is a polysynthetic language with a complex set of prefixes and suffixes, summarised in Figure 1.

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2 Some speakers merge *û* with *u* in certain environments, so that BGW *e*, having passed through *û*, ends up as *u* for these speakers. These speakers pronounce *yamûng* 'speared' as *yamung*, and thematic present *-mû* as *-mu*. This realisation is not represented in the transcriptions used in this paper.

3 The Dalabon practical orthography is used here; except for the sixth vowel *û* it is identical to the Kunwinjku orthography. Non-obvious symbols are *h* = glottal stop, *nj* = laminopalatal nasal, *rd*, *rn*, *rl* = retroflex stop, nasal and lateral, *rr* = apicoalveolar trill / tap, doubled letters for consonant length. There is no voicing contrast; voiced symbols are used for all stops except the velar, represented by *k*.

−12	−11	−10	−9	−8	(−7)*	−6	−5	−4	−3	−2	−1	0	+1	+2	+3
Obj pron	Subj pron	REL	SEQ	CAUS	misc	BEN	misc	GIN	BPIN	NUM	COM	ROOT	REFL/ RECIP	TAM	CASE

Figure 1: Structure of the Dalabon verb

−10	REL:	relative (*y(e)*) versus realis main clause (*h*).
−9	SEQ:	sequential 'and then'
−8	CAUS:	'because'
−7, −5	MISC:	various adverbial type prefixes, e.g. *warrkah-* 'in wrong place or direction'.
−6	BEN:	benefactive applicative
−4	GIN:	'generic' incorporated nouns, e.g. *borndok* 'woomera'
−3	BPIN:	'body part' incorporated nouns e.g. *wungurr* 'shadow'
−2	NUM:	'number' prefixes, e.g. *mokûn* 'bunch, group'
−1	COM:	comitative applicative
+2	TAM:	tense/aspect mood

Subject and object are shown by a combination of prefixes and proclitics which further specify some tense/mood/subordination categories. Except for subject/object portmanteaux, which are full prefixes (1), objects are shown by proclitics which normally appear just before the verbal word (2) but may be separated by a few elements such as *wanjh* (3). However, when no 'interrupting' elements as present most objects also have an reduced alternative form (e.g. *bulkah-* rather than *bulu=kah-* for '3/3pl') in which they are rhythmically and prosodically prefixes rather than proclitics (4). Only the prefixal form of objects exhibit the vowel alternations characterising the various TAM forms of prefixes.

(1) a. *Dja-h-na-n.*
3/2-R-see-PRES
'(S)he sees you.'

b. *Widji-na-n.*
3/3APPR-see-PRES
'(S)he might see you.'

(2) *Bulu ka-h-na-n.*
them 3-R-see-PR
'(S)he sees them.'

(3) *Rolu* ***bunu*** *wanjh* ***ka-h****-yelûng-banj.*
dog 3du already 3-R-next-bitePP
'The dog has already bitten them.'

(4) *Bul-ka-h-na-n.*
3plO-3-R-see-PRES
=(2), '(S)he sees them'

Following the pronominal complex comes a series of optional adverbial and applicative prefixes, as well as incorporated nominal root. Then comes the verb root, followed by an optional reflexive/reciprocal suffix, an obligatory TAM suffix (the main subject of this chapter), and optional suffixes for 'complementising case' (Dench & Evans 1988) such as the genitive to indicate purpose and the locative to indicate location. Examples (5) and (6) give instances of typical levels of morphological complexity in the Dalabon verb.

(5) *Ka-lng-yurdmi-nj bulu=ka-h-yelûng-berrû-bawo-ng,*
3-SEQ-run-PP them=3-R-SEQ-many-leave-PP
'He ran away then and left them all,

bala-buh-ngong-boyenj-ni-nj mahkih
3plSUBORD-because-mob-big-be-PP because
because there were a big mob of them.'

(6) *'... ngey-na-rr-inj-kah' kah-yin-inj.*
1dis.SUBORD-see-RR-PP-LOC 3-say-PP
'"To where we two met up (lit. where we saw each other)", he said.'

As in other Gunwinyguan languages, verbs may be made up either of a simple root (e.g. *na-* 'see', *ni-* 'sit, be') or of a combination of a prepound plus a thematic usually identical with one of the roots, e.g. *buyhwo-* 'show', which can be segmented into prepound *buyh-* plus thematic *wo-* (cf. *wo-* 'give'). The only thematics that lack a corresponding root are the (typically intransitive) verb formative *-mû* (corresponding to Bininj Gun-wok *-me*, and pGN **-ma-r*), the inchoative *-mûn* (corresponding to Bininj Gun-wok and pGN *-men*), and the reflexive/reciprocal derivational suffix.

It is the root, or thematic, which determines the form of TAM inflections. Thus once one knows how to inflect *bu-* 'hit' for TAM, this generalises to all verbs with *bu* as thematic, such as *ngibu* 'name, call by name', *ngabbu* 'give', and so forth. The only exception to this involves verbs with the thematic *-ka*, which have a complicated series of alternative paradigms, partly reflecting the fact that this thematic merges the two distinct thematics **-ka* and **-ke*, kept distinct in Bininj Gun-wok, for example. The discussion below therefore generally only gives roots or thematics unless a compound verb behaves in a way that cannot be predicted from its thematic (e.g. the irregular reductions of *bawo-* to *ba-* in the present and past imperfective forms of *bawo* 'leave').

3.1 Inflectional categories

Dalabon verb suffixes distinguish five basic TAM categories: present (PR, 7), future (F, 8), past perfective (PP, 3, 6), past imperfective (PI, 9) and irrealis, used in past negatives (IRR, 10) as well as in certain types of hypothetical and optative clauses (11). The present is also used for imperatives (12). Further TAM categories are generated through combination with different forms of the pronominal prefixes. For example, combination of the present TAM suffix with the APPRehensive prefix set is used to denote outcomes feared or to be avoided (1b).

(7) *Djarra bad-dun-kah ngarra-h-yu.*
here rock-hole-LOC 12ua-R-liePR[4]
'We three are camped here in the rock cave.'

(8) *Kardû yabbunh ngala-h-yongiyan.*
maybe two 12a-R-lieFUT
'Maybe we'll stay two nights.'

(9) *Bim bula-h-nguninj wurrkardi-kûn.*
white.clay 3a/3-R-eatPI diarrhoea-GEN
'People used to eat white clay to stop diarrhoea.'

(10) *Mak norr nga-wo-y, mak norr nga-ngabbu-y.*
not 2du 1IRR-give-IRR not 2du 1IRR-give-IRR
'I didn't give it to you two (harmonic).'

(11) *Dah-me-y.*
2/3-get-IRR
'You should have got it.'

(12) *Nah-ngan, nah-ngan, ka-h-na-n!*
mother-my mother-my 2/1-R-look-PR
'Mummy, mummy, look at me!'

Note that pronominal prefixes in realis categories end in the glottal stop (here written *h* and glossed R), whereas those in non-realis categories such as the apprehensive (1a) and irrealis (11) lack the glottal stop. There are also two sets of special 'subordinate clause' prefix forms, which likewise lack the glottal stop; (5) and (6) are examples. Imperatives and hortatives select the realis prefix form with the glottal stop (e.g. (12)).

Further aspectual distinctions are made by reduplication of the root to show continuous or durative activity (13), and by aspectual-type adverbial prefixes such as *bamû-* 'not yet' (14). These will not be discussed further in this paper.

(13) *Ka-h-djal-ng-nawoydo-duninj budjkûh-budj-kûn, yila-h-yang-wona-wona-ny*
3-R-just-SEQ-dingo-REALLY REDUP-bush-GEN 1pl/3-R-talk-REDUP-hear-PI

yale-yu-yu, warrûkkûn yale-yu-yu.
1plSUBORD-REDUP-sleepPI before 1plSUBORD-REDUP-sleepPI
'They were real bush dingoes, we would keep hearing their howls as we were sleeping, before as we were sleeping ...'

(14) *Nga-h-bolh-wa-ninj, kahke mah nga-bamû-bolh-we-y*
1/3-R-track-follow-PI nothing NEG 1/3-not.yet-track-follow-IRR

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4 This sentence and the following one came from a speaker with a deviant number system following a minimal/augmented rather than a singular/plural system: while for most speakers the prefix *ngarra-* means 'you and me, three or more' (i.e. plural), for this speaker it meant precisely 'you, me and one other' (i.e. 12 unit augmented, glossed here as 12ua), with *ngala-* meaning 'you, me and two or more others' (i.e. 12 augmented, glossed here as 12a).

nga-h-bolh-yawa-ninj.
1-R-track-look.for-PI
'I kept following the track without success, I hadn't picked up the track yet,
I kept looking for the track.'

Four of the five TAM inflections are cognate with those in Dalabon's closest relative, Bininj Gun-Wok (see Alpher, Evans & Harvey this volume).

The future, however, lacks cognates within the Gunwinyguan family. Interestingly, however, a formally identical suffix *-yan* is found in Wardaman (Merlan 1994:178–179, 198), just to the southwest of the Gunwinyguan family. Compare *buyan* 'hit-FUT' (Dal), 'hit-POT' (Ward); *nguyan* 'eat-FUT' (Dal), 'eat-POT' (Ward), *woyan* 'give-FUT' (Dal), 'give-POT' (Ward), *niyan* 'see-FUT' (Dal), *nayan* 'see-POT' (Ward). This raises the question of whether this is (a) the result of borrowing in one direction or another — but there are few other signs of contact between these languages, (b) a convergent independent development, arising by grammaticalising a form of the root *ya* 'go' as a future/potential marker — though the formal resemblances are so striking that this also seems unlikely, and there is also no candidate present form *yan* 'go' in either language or their near relatives, or (c) a shared inheritance from a higher-level proto-language, which among the Gunwinyguan languages has survived only in Dalabon. We believe that (c) is the most likely possibility, but to confirm it we need to look for cognate forms elsewhere outside Gunwinyguan (see R. Green (this volume) on a formally similar category in a number of other Arnhem Land languages, though she does not believe it to be cognate).

A further, composite inflection is built on the past imperfective by suffixing *-yi* (identical to the ergative/instrumental, except for the lack of final glottal stop); it appears to be a Dalabon innovation. This category functions as a 'customary past', and is used for describing events that used to take place as a matter of custom. Two examples are:

(15) *Bûla-h-ma-nginjyi nûnda korrûhkunh-ninj rangan-yih kowk.*
3pl/3-R-get-CUST.PST DEM long.ago-PI paperbark-INSTR shelter
'They used to get paperbark way back in the olden days to make shelters.'

(16) *Bûla-h-karrû-yidjnja-ninjyi nayunghyungki dadbû-kûn.*
3pl/3-R-song-have-CUST.PST old.people brown.snake-GEN
'They used to have a song, the old people, for the king brown snake.'

One more morphological possibility, shared with Bininj Gun-wok, is to incorporate one gerundivised verb into another, most commonly into *bon* 'go' but sometimes also into *di* 'stand'. Thus *njudjmû* 'sneeze' can be gerundivised by replacing the final *û* with *i*, and placing it directly before the main verb root, for example:

(17) *Nga-h-njudjm-i-bo-ninj.*
1-R-sneeze-GER-go-PI
'I was going around sneezing.'

At this point of research there appear to be two formal means of deriving participles — either by replacing final *û* with *i*, as in (17), or by adding *ey* to the present form (with *e* replacing any thematic-final vowel), as in (18a, b). It is not clear at this stage what conditioning factors are involved in this choice, which may be dialectal rather than phonological (since (18), like (17), also involves a *-mû* verb).

(18) a. *Djamard ka-h-dala-barrm-ey-bo-n, yirrh wah-kah.*
lizard.sp 3-R-mouth-open-GER-go-PR down water-LOC
'The djamard lizard goes along with its mouth open, down to the water.'

b. *Ka-h-warlkka-rr-inj, ka-h-warlkk-ey-di-ø, kanunh biyi*
3-R-hide-RR-PP 3-R-hide-GER-stand-PR that man

ka-h-warlkka-rr-inj mak bûla-ngalk-iyan.
3-R-hide-RR-PP NEG 3pl/3-find-FUT
'He's hidden himself, he's in hiding, that man has hidden himself and they won't find him.'

Table 1: TAM inflectional paradigm of one representative verb in each pattern

		RR	PRES	FUT	PI	PP	IRR
1	*mang*	*marrûn*	*mang*	*miyan*	*manginj*	*me*	*mey*
1a	*dong*	*dorrûn*	*dong*	*dongiyan*	*donginj*	*do*	*dongi*
2	*dung*	*durrûn*	*dung*	*dungiyan*	*dunginj*	*dunj*	*dungi*
2a	*ni*		*ni*	*ningiyan*	*ninginj*	*ninj*	*ningi*
2b	*yu*	*yurrûn*	*yu*	*yongiyan*	*yonginj*	*yo*	*yongi*
2c	*da*		*di*	*dangiyan*	*danginj*	*dinj*	*dangi*
2d	*yenjdjung*		*yenjdjung*	*yenjdjungiyan*	*yenjdjunginj*	*[yininj]*	*yenjdjungi*
2e	*wadûng*		*wadûng*	*wadûngiyan*	*wadûnginj*	*wadûnginj*	*wadûngi*
3	*na*	*narrûn*	*nan*	*niyan*	*naninj*	*nang*	*ney*
3a	*bu*	*burrûn*	*bun*	*buyan*	*buninj*	*bong*	*buy*
3b	*bon*		*bon*	*boniyan*	*boninj*	*bong*	*boni*
3c	*kinj*	*kinjûrrûn*	*kinj*	*kinjiyan*	*kinjinj*	*kinjing*	*kinji*
4	*ngun*	*ngurrûn*	*ngun*	*nguyan, nguniyan*	*nguninj*	*ngunj*	*nguy*
4a	*wan*	*warrûn*	*wan*	*wiyan*	*waninj*	*wawinj*	*wey*
4b	*don*		*don*	*doniyan*	*doninj*	*donj*	*doni*
5	*rakka*		*rakkan*	*rakkiyan*	*rakkaninj*	*rakkang*	*rakkey*
$5a_1$	*djowkka*		*djowkkan*	*djowkkiyan*	*djowkkanj*	*djowkkang*	*djowkkey*
$5a_2$	*ka*	*karrûn*	*ka*	*kiyan*	*kanj*	*kang*	*key*
$5a_3$	*marrka*		*marrka*	*marrkiyan*	*marrkaninj*	*marrkanj~ marrkang*	*marrkey*
5b	*wo*	*worrûn*	*won*	*woyan*	*woninj*	*wong*	*woy*
$5b_1$	*bawo*	*baworrûn*	*ban*	*bawoyan*	*baninj*	*bawong*	*bawoy*
6	*-mû*	*-mûrrûn*	*-mû*	*-miyan*	*-minj*	*-minj*	*-mi*
7	*yamû*	*yamûrrûn*	*yamûng*	*yamiyan*	*yaminj*	*yamûng*	*yami*
7a	*nam*	*namiworrûn*	*nam*	*namiyan*	*naminj*	*namûng*	*nami*
7b	*nahbû*		*nahbû(h) ~ nahbun*	*nahbiyan*	*nahbinj*	*nahbong*	*nahbi*
8	*-mûn*		*-mûn*	*-mûniyan*	*-mûninj*	*-minj*	*-mini*
8a	*-rrûn*		*rrûn*	*rrûniyan*	*rrûninj*	*rrinj*	*rrûni*
9	*yin*		*yin*	*yinmiyan*	*[yihyininj]*	*yininj*	*yini*

3.2 The TAM suffix paradigm

Table 1 shows the paradigm of TAM inflections for a representative verb of each pattern, while Table 2 displays the pattern of suffixes stripped from the root. In addition the reflexive/reciprocal form is given where it exists, since this is the most reliable indicator of the verb root: virtually all verb roots can be identified by removing the reflexive/reciprocal suffix *-rrû-*, the only exceptions being *nam* 'put (on)' and *yin(mi)* 'do, say', which extend the root with *wo-* (etymologically 'give') before adding the RR suffix. Reflexive/reciprocal forms then form their own inflectional class, 8a; normally the RR inflections do not influence the preceding material, but where they attach to the sequence *-mû* they induce changes to the preceding vowel as shown in (8b).

Table 2: Paradigm of TAM inflectional suffixes, stripped from the root

	predominant allomorphs	RR *-rrû-*	PRES *-ng, -n, -ø*	FUT PR + *(i)yan*	PI PR + *inj*	PP *-y, -nj, -ng*	IRR *+i/y*
1	*ma-ng*	*-rrûn*	*-ng*	*-Iyan*	*-nginj*	*-E*	*-Ey*
1a	*do-ng*	*-rrûn*	*-ng*	*-ngiyan*	*-nginj*	*-ø*	*-ngi*
2	*du-ng*	*-rrûn*	*-ng*	*-ngiyan*	*-nginj*	*-nj*	*-ngi*
2a	*ni-ø*		*-ø*	*-ngiyan*	*-nginj*	*-nj*	*-ngi*
2b	*yu-ø*	*-rrûn*	*-ø*	*-Ongiyan*	*-Onginj*	*-O*	*-Ongi*
2c	*da-[ng]*		*-I*	*-ngiyan*	*-nginj*	*-Inj*	*-ngi*
3	*na-n*	*-rrûn*	*-n*	*-Iyan*	*-ninj*	*-ng*	*-Ey*
3a	*bu-n*	*-rrûn*	*-n*	*-yan*	*-ninj*	*-Ong*	*-y*
3b	*bo-n*		*-n*	*-niyan*	*-ninj*	*-ng*	*-ni*
3c	*kinj(i)*	*-rrûn*	*(-i)*	*-yan*	*-nj*	*-ng*	*-ø*
4	*ngu-n*	*-rrûn*	*-n*	*-yan, -niyan*	*-ninj*	*-nj*	*-y*
4a	*wa-n*	*-rrûn*	*-n*	*-iyan*	*-ninj*	*-winj*	*-Ey*
4b	*do-n*		*-n*	*-niyan*	*-ninj*	*-nj*	*-ni*
5	*rakka-n*	*-rrûn*	*-n*	*-Iyan*	*-ninj*	*-ng*	*-Ey*
$5a_1$	*djowkka-n*	*-rrûn*	*-n*	*-Iyan*	*-nj*	*-ng*	*-Ey*
$5a_2$	*ka*	*-rrûn*	*-ø*	*-Iyan*	*-nj*	*-ng*	*-Ey*
$5a_3$	*marrka*		*-ø*	*-Iyan*	*-ninj*	*-nj*	*-Ey*
5b	*wo-n*	*-rrûn*	*-n*	*-yan*	*-ninj*	*-ng*	*-y*
$5b_i$	*ba‹wo›-n*	*-rrûn*	*-‹wo›n*	*-yan*	*-‹wo›ninj*	*-ng*	*-y*
6	*-mû-ø*		*-ø*	*-Iyan*	*-Inj*	*-Inj*	*-I*
7	*yamû-ø*	*-rrûn*	*-ng*	*-Iyan*	*-Inj*	*-ng*	*-I*
7a	*nam(û)*	*-worrûn*	*-(û)*	*-iyan*	*-inj*	*-ûng*	*-i*
7b	*nahbû/u*		*-ø ~ -h ~ -Un*	*-iyan*	*-inj*	*-ong*	*-i*
8	*mû-n*		*-Ûn*	*-Ûniyan*	*-ninj*	*-Inj*	*-ni*
8a	*-rrû-n*		*-n*	*-niyan*	*-ninj*	*-Inj*	*-ni*
8b	*-mûrrû-n*		*-mûrrûn*	*-mûrrûniyan*	*-mûrrûninj*	*-mirrinj*	*-mirrini*
9	*yi-n*		*-n*	*-nmiyan*		*-ninj*	*-ni*

[X] conjugational element not found in present form, but appearing in the two other TAM categories (FUT and PI) normally derived from the present.

(X) root vowel dropped in present

<X> root element dropped in present and PI

I, E, O, U suffixal vowel (i, e, o, û), which replaces root-final vowel

Note that:

- PRES has *-ng* (1, 7), *ø* (2, 6), *-n* (3, 4, 5)
- PP has *-y* (1), *-nj* (2, 4), *-ng* (3, 5, 7b)
- PI, IRR and FUT are mostly based on the present stem.

As in most other Gunwinyguan languages (see Alpher, Evans & Harvey this volume) there is a substantial number of conjugations, and a messy relationship of final nasal alternations to TAM categories. Thus *-ng*, which is a present marker in conjugations 1 and 2, is a marker of the past perfective conjugations 3 and 5; in conjugation 7 it appears in both present and past perfective. With conjugations in which vowel alternations occur, in conjugations 1 and 3 the present contains the predominant form, which is then raised in the past perfective, while in conjugation 2b it is the past perfective which contains the dominant vowel (*o*), which is then raised in the present, although in this latter case it is the present rather than the predominant form which serves as the RR base, and is therefore given here in the citation form.

The present form serves as the base for the future and past imperfective forms, which in most cases can be predicted by adding *-(i)yan* (FUT) or *-inj* (PI) to the present form. The main exceptions to this are the three stance verbs, which each have a velar nasal which appears in the FUT and PI but is not in the present; some of the other subconjugational differences also depend on whether a nasal found in the present serves as a base for the future — cf. 'see' (3) *nan: niyan* but 'go' (3a) *bon: boniyan*. The past perfective form frequently takes a different nasal, and this cannot always be predicted from the present form: contrast *mang: mey* but *dung: dunj*, or *nan: nang*, *bun: bong* but *ngun: ngunj*.

As these alternations demonstrate, it is also impossible to predict the present from the past perfective form: past perfective forms in *-nj* can have present forms in *-n*, *-ng* or *-ø*, and past perfective forms in *-ng* can also have present forms in *-n*, *-ng* or *-ø*.

Verbs with the thematic *-ka* present special difficulties; as mentioned in the introduction this is the only thematic where one cannot predict all the conjugated forms for any verb containing it. Some verbs with this thematic have *-ø* in the present (*ka* 'carry', *marrka* 'shake'), others have *-n* (*rakkan* 'fall', *djowkkan* 'cross'); some have *-nj* (*djowkkanj*, *kanj*) in the past imperfective while others have *-ninj* (*rakkaninj*, *marrkaninj*); some have *-ng* in the past perfective (*rakkang*, *djowkkang*, *kang*) while others have *-nj* (*marrkanj*). These three binary choices, unfortunately, generally do not correlate with one another — if they did, we could arrange them into two (sub)conjugations. On the other hand, there are some correlations: we do not find all eight of the logically possible combinations exemplified. Thus, knowing that a verb takes *-n* in the present doesn't help you predict the past imperfective form, though it does correctly predict that the past perfective will be *-ng*, and knowing that a verb takes *-nj* in the past imperfective doesn't help predict the present form, though again it does correctly predict that the past perfective will be *-ng*. To make matters worse, there is additional inter- and even intra-speaker variation with some verbs (not shown on the above table): the present of *yaka* 'fall (of rain)' has been recorded as both *yaka* and *yakan*, for example, and some speakers have *marrkang* rather than *marrkanj* as the past perfective of *marrka*. It is possible that some of this variation originates from a merger of the historically distinct thematics *-ka* and *-ke*, which have different conjugational patterns in Bininj Gun-wok. Dalabon *ka* 'carry' and *warlkka* 'hide', for example, correspond to Bininj Gun-wok *ka* and *warlkka*, while the Dalabon use of *-ka* for the transitive member of intransitive/transitive verb pairs like *dadjmû* 'be cut, cut off' vs *dadjka* 'cut (tr.)' corresponds to the use of *-ke* for this opposition in Bininj Gun-wok: *dadjme* 'be cut, cut off' vs *dadjke*

'cut (tr.)'. In terms of system, the *-ke* thematic would have supplied a zero-inflected present (BGW *dadjke* 'cut:NPST') and the *-ka* thematic an *n*-inflected present (BGW *warlkkan* 'hide-NPST'). However, this explanation only gets us so far, since the *n*-inflected present verbs in Dalabon do not correlate very well with those in BGW, and moreover the BGW system, for these two thematics, entirely lacks past perfectives in *-nj* and past imperfectives in *-ninj*. So at best the merger of these two distinct thematics would have created the two present forms, which have then been redistributed over individual verbs.

Returning now to the overall system, the limited amount of vowel alternation is mostly explicable by assimilation to adjoining glide articulations, such as the form *niyan* instead of the more regular **nayan* as the future of 'see', or *mey* rather than expected **may* as the irrealis of 'get'. In the case of *da[ng]* 'stand' and *yo/u* 'lie', however, vocalic alternations may represent the collapse of vowel-graded variants of these stance verbs which are widely though chaotically attested in Gunwinyguan — see Alpher, Evans and Harvey (this volume).

Overall, the whole inflectional system conforms to very strong phonotactic constraints: inflected words must end in (a) one of the nasals *n*, *ng* or *nj* (b) any of the six vowels (c) the glide *y*. Again, similar constraints are found in most Gunwinyguan languages, but also in other Arnhem Land languages such as Iwaidja or Maung.

There are three pairs of verb roots which, for some TAM values at least, are distinguished only by the form of the TAM inflection and/or vowel contrasts employed for TAM ablaut: *yu* 'lie' vs *yu-ng* 'put', *ru-n* 'cry' vs *ru-ng* 'burn (intr.)', and *bo-n* 'go' vs *bu-n* 'hit' (which fall together in their PP forms, *bo-ng* in both cases).

3.3 Conjugation membership

A complete listing of conjugation membership would run to many hundreds of verbs and is beyond the scope of this article. Below we confine ourselves to listing (a) all attested themes for each conjugation, and (b) a sampling of common compound verbs. We comment on certain important correspondences to Bininj Gun-wok conjugations, though again for reasons of space we do not do this exhaustively.

CONJUGATION 1. Corresponds to BGW verbs in *ma-ng*.

ma-ng	'get' (BGW *ma-ng*)
balk-ma-ng	'catch'
ye-ma-ng	'pull out of' (conventionalised comitative form)
wowh-ma-ng	'lift up'
djird-ma-ng	'steal' (BGW *djirdma-ng*)

CONJUGATION 1A. Though this verb has cognates in BGW, it is organised quite differently — see Alpher, Evans and Harvey (this volume).

do-ng	'strike' (BGW *dong*)

CONJUGATION 2. Corresponds to BGW verbs in *du-ng* and *ru-ng*, with the recruitment of *ba-ng* which is disyllabic in BGW (*baye*) as in most Gunwinyguan languages.

du-ng	'swear, growl at' (BGW *du-ng*)
K-du-ng	'call s.o. as kin K', e.g. *nahngan-du-ng* 'call someone mother'
ru-ng	'burn (intr.)' (BGW *ru-ng*)
yu-ng	'put, put down'
ba-ng	'bite'

CONJUGATION 2A. Though this verb has cognates in BGW, it is organised quite differently — see Alpher, Evans and Harvey (this volume).

ni[ng]	'sit' (BGW *ni*)

CONJUGATION 2B. Again this is organised quite differently to its BGW correspondent *yo*.

yu	'lie'
njengûyu	'sleep'

CONJUGATION 2C. Roughly corresponds to BGW verbs in *-di*, which also exhibit the two stems *di* and *da[ng]*.

di	'stand'
daddi	'be inside'
warddi	'be up high'

CONJUGATION 2D. This contains only *yenjdjung* 'speak', which is a slightly defective member of Conjugation 2, which lacks a PP form; instead the PP form *yininj* of *yin* 'do, say' is used. It is likely that both *dung* 'swear at' and the thematic *djung* of *yenjdjung* descend from a single root **dhung*[5] with the laminality preserved in *yenjdjung* because of the preceding palatal nasal.

CONJUGATION 2E. This contains only *wadûng* 'crawl, go on all fours', which differs from the main 2 conjugation only in having apparently neutralised the distinction between PI and PP forms in favour of the former.

CONJUGATION 3. Corresponds to BGW verbs in *-na-n* 'see'.

na-n	'see' (BGW *na-n*)
wodna-n	'throw, push'
wona-n	'hear, listen'

CONJUGATION 3A. Corresponds to BGW verbs in *-bu-n* 'hit'.

bu-n	'hit, kill' (BGW *bu-n*)
ngibu-n	'name, call by name' (BGW *ngeybu-n*)
ngabbu-n	'give'
danjbu-n	'spear' (BGW *danjbu-n*)
marnbu-n	'ignite, make' (BGW *marnbu-n*)
dombu-n	'extinguish' (BGW *dombu-n*)
dulubu-n	'shoot' (BGW *dulubu-n*)

CONJUGATION 3B. No BGW equivalent.

bo-n	'go'

CONJUGATION 3C. The BGW cognate *kinje* belongs to a *-ke/-we/-nje* conjugation with no Dalabon equivalent.

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5 See Harvey (this volume) on pGN laminodentals, and Alpher, Evans and Harvey (this volume) on this verb.

kinj(i)	'cook' (BGW *kinje*)
binj(i)	'"scratch", dig up'

CONJUGATION 4. This corresponds to BGW formatives in *-ngu-n* 'eat', and *-wa-n*, which belong to quite different conjugations. In BGW the simple verb *-wa-n* has supplied the suppletive past perfective of 'go' (*wam*), but otherwise this only occurs as a thematic; in D it is also slightly irregular (see conjugation 4a) with its partially reduplicated root in the PP.

ngu-n	'eat' (only this verb is attested with the alternative future form as *nguniyan* rather than *nguyan*)
ru-n	'cry'
yidjnja-n	'hold, grasp, have'
djawa-n	'ask'
yawa-n	'search, look for'
borlh-wa-n	'follow along'
warkwa-n	'not know; forget (PP)'

CONJUGATION 4A.

wa-n	'follow'

CONJUGATION 4B. The corresponding BGW verb is disyllabic (*dowe*) and belongs to a *-we/-ke* conjugation not represented in Dalabon.

do-n	'die'

CONJUGATION 5, 5A. For some *-ka* verbs there is still insufficient evidence (e.g. no attestation yet for PR, PP or PI) to determine the subconjugation of the verb.

5	*rakka-n*	'follow'
	dolka-n	'fly' (BGW *dolka-n*)
	djangka-n	'hunt' (BGW *djangka-n*)
	ngalka-n	'find' (BGW *ngalke*)
5a1	*djowkka-n*	'cross' (BGW *djowkke*)
	dirnika-n	'sit down'
5a2	*ka*	'carry'
	dadjka	'cut' (BGW *dadjke*)
	birdika	'go in, enter'
	mukka	'cover'
	murridjka	'break'
5a3	*marrka*	'shake'

Alternating (speaker variation):

dukka(-n)	'tie' (BGW *dukka-n*) 5 ~ 5a3
yaka(n)	'(rain) fall' 5a3, but with *-n* sometimes attested in the present (which is then a new subconjugation)

Insufficient information:

bakka	'break' (BGW *bakke*)
lidjka	'pinch' (BGW *lidjke*)
yibka	'sink, set (sun)' (BGW *yibke*)

CONJUGATION 5B. Corresponds to BGW verbs in (-)*wo-n* 'give'.

wo-n	'give'
buyhwo-n	'show'

CONJUGATION 5B.I. In BGW *bawon* is a regular member of the *-wo-n* conjugation.

ba<wo>-n	'leave'

CONJUGATION 6. This corresponds to BGW verbs in *-me*.

worrowkmû	'jump, leap' (BGW *worrowkme*)
durrkmû	'pull' (BGW *durrkme*)
marhmû	'want to go' (BGW *marhme*)
dalhmû	'kick' (BGW *dalhme*)
jujumû	'swim, "bogey"'
larrayhmû	'cook on coals'
bulhmû	'arrive'
dudjmû	'return'
warrbmû	'tell a lie'
nomû	'smell, sniff'

CONJUGATION 7. In BGW this is simply a member of the *-me* conjugation.

yamûng	'spear' (BGW *yame*)

CONJUGATION 7A. In BGW this is again a simple member of the *-me* conjugation.

nam(û)	'put' (*name* 'make')
wardnam(û)	'put up high'

CONJUGATION 7B. The only member of this conjugation is the verb for 'dance', whose present form has been recorded as *nahbun*, *nahbûh* and *nahbû* (from different speakers). In the PP it follows the pattern of a Conjugation 2B verb (with the characteristic replacement of *bun* by *bong*), but in the other TAM values it patterns like the other verbs in Conjugation 7A.

CONJUGATION 8 *-mûn* 'inchoative'. Unlike the other themes given above, this is always bound. It is a productive means of forming (mostly) intransitive verbs. It corresponds to *-men* verbs in BGW.

dulhmûn	'be cold'
worrhmûn	'be full' (BGW *worrhmen*)
djongmûn	'be afraid'
yûrrûmûn	'get wild'
rarrûmûn	'grow'

CONJUGATION 8A. The BGW form *-rren* has a similar conjugation.

All verbs in their reflexive/reciprocal form, e.g. *wonawonarrûn* 'listen to each other; listen to oneself; think'. The only difference from 8 is in the vocalism of the irrealis form: *-rrûni* versus *-meni*.

CONJUGATION 9. This contains just the verb *yin* 'do, say'. This verb is defective. No PI form has been attested, though a customary form *yih-yininjyi* has been, which in this case is based on a reduplicated form of the PP *yininj*. At least in its 'say' meaning, relevant forms of the verb *yenjdjung* 'speak' may be used for the missing TAM values; conversely, PP *yininj* is used to fill in the gap left by the lack of a PP form of *yenjdjung*.

This verb continues an old but rather scantily attested root *yi-n* 'say; do' (see Alpher, Evans & Harvey this volume). Two Dalabon-internal alternations suggest this once had a further root form *yinmi* in some TAM values: the F *yinmiyan*, and the word *yinmiwon* 'instruct, teach', which appears to be made up of *yinmi* plus a causativising use of *won* 'give'. Such a form, with *yinm*, would relate this root to the BGW form *yime* 'do, say' via simplification of the nasal cluster.

4 Final remarks

A remarkable feature of the historical morphology of the Gunwinyguan languages is the stability of the overall pattern of having around a dozen conjugations organised around monosyllabic roots/thematics, from which a much larger set of verb lexemes is derived by compounding with 'prepounds'.

At any given point there may, however, be a few disyllabic verbs that do not fit this pattern (e.g. *kinje* 'cook' in BGW, for which an element *-nje* is not synchronically extractable). Dalabon appears to have reduced some of these disyllabic verbs (as well as others which do have a theoretically segmentable thematic, such as *wo* in *bawo* 'leave') to monosyllables, and in the process has created some new subconjugations.

In some cases this process of reducing a disyllabic root to a monosyllable has been complete, as in the case of *do-* 'die' from *dowe* attested in BGW (and ultimately from *dhuwe-* or *dhuwa-*; see Alpher, Evans & Harvey this volume). In other cases reduction to a monosyllable is only found in the present form, either through loss of a final vowel (*kinje* > *kinj* 'cook-PR', but with stem *kinji-* in all other TAM values) or of the initial CV of the second syllable (*bawon* > *ban* 'leave-PR', but with stem *bawo-* elsewhere). The new patterns created by these monosyllabisations create new conjugational types even as other conjugations are being lost.

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n.d., Ngalkbon verbal paradigms.

10 *Western Gunwinyguan*

MARK HARVEY

This paper provides evidence that Jawoyn (Merlan n.d.) and Warray (Harvey n.d.) are more closely related to one another than either is to any other GN language. There is both lexical and grammatical evidence for this connection. As such, Jawoyn and Warray could from some perspectives be viewed as forming a subgroup within the GN family. However, the relationship is not a close one, and the term 'subgroup' must be treated with caution. Rather than 'more closely', it would be somewhat more appropriate to describe Jawoyn and Warray as being less distantly related to each other than either is to any other GN language.

Given that Jawoyn and Warray are not contiguous (Map 3), establishing a particular connection between Jawoyn and Warray necessitates consideration of the intervening language varieties. There were two, now extinct, language varieties intervening between Jawoyn and Warray: Uwinymil and Wulwulam. Uwinymil is poorly recorded, but the available materials suffice to establish that it was a distinct language (Harvey, to appear). Wulwulam is even more poorly recorded, and the available materials do not suffice to establish its technical linguistic status. The available materials on Wulwulam are examined in §3.

1 lexical correspondences

Jawoyn and Warray show a high degree of lexical cognacy across all lexical domains (Harvey this volume, Chapter 8), but the diachronic significance of this requires consideration. Firstly, Jawoyn also shows a high degree of lexical cognacy with Bininj Gunwok, its northern neighbour. Secondly, there are examples in Australia of intensive borrowing leading to high degree of lexical cognacy (Heath 1978a). In order to determine the significance of the degree of lexical cognacy between Jawoyn and Warray, it is necessary to examine the distribution of cognates by morphological type and semantic domain.

In general terms, it is well established that correspondences between word forms involving root-level morphological relations are indicative of a greater time depth than are correspondences between word forms not involving root-level morphological relations. In terms of semantic domains, there is evidence that among nominals the 'adjective' and 'body

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part' domains are comparatively resistant to diffusion (Harvey this volume, Chapter 8). Consequently, correspondences in these semantic domains are indicative of a greater time depth.

The correspondence sets appearing only in Jawoyn and Warray, or only in Jawoyn and Bininj Gun-wok, are listed in the Appendix. These two groups of correspondence sets show very different distributions, when examined against the criteria of morphological type and semantic domain discussed. These very different distributions are summarised in Table 1.

Among the GN languages, all verbal paradigms involve substantive root-level suffixation. There are two verbs which appear only in Jawoyn and Warray. There are no correspondences involving paradigmatic root-level morphology which are exclusive to Jawoyn and Bininj Gun-wok. Similarly, there are significantly more correspondences in the adjectival and body-part domains which are exclusive to Jawoyn and Warray than there are exclusive to Jawoyn and Bininj Gun-wok. The greatest number of correspondences, exclusive to Jawoyn and Bininj Gun-wok, are found in the domain of natural species names.

Table 1: Language-pair cognate counts by morphological type and semantic domain

	Jawoyn-Warray	Jawoyn-BGW
Verbs	2	0
Coverbs	17	21
Adjectives	13	1
Body parts	8	4
Material objects	2	5
Natural species	6	27
Other nominals	10	15
Total	58	73

The comparative distributions of these two groups of correspondence sets argues that the correspondences between Jawoyn and Warray are generally of a greater time depth, and that consequently that many are attributable to inheritance from a common ancestor, exclusive to Jawoyn and Warray. The correspondence sets between Jawoyn and Bininj Gun-wok are of a comparatively lesser time depth. Consequently, borrowing appears to have been a significant factor between these two languages.

2 Grammatical correspondences

It is well established that correspondences in affixal morphemes are indicative of a greater time depth than correspondences in root morphemes, particularly those root morphemes which can appear as self-sufficient phonological words, as is commonly the case with nominals in GN languages. We may note that there are no affixes which appear only in Jawoyn and Bininj Gun-wok. On the other hand, there are a number of affixes which appear only in Jawoyn and Warray. There are two affixes, a noun class prefix and a reduplicative prefix, which form part of larger paradigmatic systems, and consequently provide perhaps the clearest evidence of a connection between Jawoyn and Warray. We may begin by considering these prefixes.

2.1 Noun classes

The noun class systems of Jawoyn, Warray and the Gundjeihmi dialect of Bininj Gun-wok are very similar. All of the languages show a distinction between head and agreement classes (Evans 1997; Harvey 1997). The head classes of the three languages differ somewhat.

Gundjeihmi (Bininj Gun-wok) Head Classes (Evans 1997)

I	*na-*	Some human male referents, a few animals and others
II	*(ng)al-*	Some human female referents, a few animals and others
III	*(ng)an-*	Plants, weapons, manner adverbials, some body parts, some geographical features
IV	*kun-*	Body parts, geographical features, artefacts, fire, camp, abstract nouns
V	*Ø-*	Residue class including all other nouns

Jawoyn Head Classes

I	*na-*	Some human male referents, a few animals and others
II	*ngal-*	Nearly all human female referents, a few others
III	*ngan-*	Locational/adverbial class, including body parts and geographical features
IV	*Ø-*	Residue class including all other nouns

Warray Head Classes

I	*a-*	Some human male referents, a few others
II	*al-*	Human female referents
III	*an-*	Body parts, some geographical features
IV	Ø-	Residue class including all other nouns

All three languages show essentially the same pattern of agreement classes.

Bininj Gun-wok, Jawoyn and Warray Agreement Classes

I	*(n)a-*	human male and (higher) animate referents; is the unmarked prefix form being a possible prefix with any class of referent
II	*(ng)al-*	human female referents
III	*(ng)an-*	other referents

The Gundjeihmi head classes I and II relate directly to the Jawoyn and Warray classes, both in the form of the class prefix and in the nature of the semantic domains forming the classes. The form of the Gundjeihmi head class III prefix appears to relate to the head class III prefixes found in Jawoyn and Warray. However, the semantic domains associated with head class III in Gundjeihmi differ significantly from those associated with head class III in Jawoyn and Warray. Head class III in Jawoyn and Warray is focally a part noun class.

The Gundjeihmi head class III does include a few body and geographical part nouns. However most part nouns in Gundjeihmi belong to head class IV, and head class III is focally a plant class. The disparity between the semantic domains marked by the *(ng)an-* prefix in Gundjeihmi and those marked by this prefix in Jawoyn/Warray is such that any

relationship between the Gundjeihmi prefix and the Jawoyn/Warray prefixes must be viewed as less close than the relationship between the Jawoyn and Warray prefixes.

The nature of relationship between the Jawoyn and Warray prefixes requires some consideration. Heath (1978a:87–91) argues that prefixes marking non-human classes may be diffused. Therefore the possibility that the relationship is diffusional rather than inherited must be considered. In this particular case, the evidence is against diffusion. While Jawoyn and Warray show significant similarities in head class III, they also show some differences. In Jawoyn, the *ngan-* prefix forms part of a paradigm conveying both class and case information. In locative cases, the prefix for class III nouns is *ni-*.

(1)	*ngan-coli*	*ni-coli*
	'III-crossing' (non-locative)	'III-crossing' (locative)

In Warray, the prefixes do not convey case information, and the class III prefix is *an-* in all case roles. In Warray, not all body-part nouns belong to class III. Alienable body-part nouns generally belong to class IV (Harvey 1996). In Jawoyn, alienable body-part nouns generally belong to class III, along with the inalienable body-part nouns.

Given the greater paradigmatic complexity of the Jawoyn prefixes, any diffusion is likely to have been from Jawoyn into Warray (Heath 1978a:104–115). However, the differences in semantic organisation suggest that any putative diffusion into Warray is not recent. Further, there is evidence from place names in Warray country that the class III marker is of some antiquity in the language.

(2)	*Ancimcim*	*cimcim*
	'place name'	'itchy grub/substance'

The place name *Ancimcim* derives from the noun *cimcim* 'itchy grub/substance'. However this derivational relation is not productive. Productive place-name derivation involves the use of the locative suffix *-lik* (i.e. the productive derivation would be *Cimcim-lik*). The place names *Anpekkola* and *Anporrokkorl* also appear to involve a similar non-productive use of the class III marker. *Anpekkola* and *Anporrokkorl* have a single primary stress on their second syllable, which is a possible pattern for four-syllable nouns consisting of a monosyllabic noun class prefix and trisyllabic stem. Four-syllable nouns consisting solely of an unanalysable root normatively have stresses on the first and third syllables. Consequently the place names appear to consist of the class III prefix *an-* + the stems *pekkola* and *porrokkorl*. These stems are however meaningless. Thus the names, including the frozen class III prefixes, have presumably not been given to the places in any recent period.

Given the evidence for the antiquity of **ngan-* as a head class marker for a part noun class in both Jawoyn and Warray, **ngan-* may be reconstructed as a prefix marking a class of part nouns in a proto-language ancestral to the two languages. The Gundjeihmi *(ng)an-* prefix argues that the **ngan-* prefix may be of some antiquity within the GN family. It seems unlikely that this prefix has been borrowed into Gundjeihmi from Jawoyn. The cases of potential diffusion of class prefixes, discussed by Heath (1978a:87–91), all involve the borrowing in tandem of a particular prefix form and the semantic domains associated with that prefix. As we have seen, the set of semantic domains focally associated with the *(ng)an-* prefix in Gundjeihmi shows considerable differences from the set of semantic domains associated with this prefix in Jawoyn and Warray.

The other Bininj Gun-wok dialects have essentially the same prefixal class system as Gundjeihmi. However, in the other dialects, the marker for head class III is *man-*. Many northern languages have a plant class which is marked by a prefix of the form *mV(n)-*. Among the Gunwinyguan languages, Ngalakgan and Ngandi have a noun class of this nature. There is one other NPN language, apart from Bininj Gun-wok, which shows an alternation between /m/ initial and /ng/ initial forms in the prefixal marking of a particular class: Maung. Maung has a plant class, which includes a number of part nouns. This class is generally marked by a prefix *ma-*. However, in a few adjectival paradigms, this class is marked by a prefix *nga-* (Capell & Hinch 1970:56). This suggests that the *nga(n)-* prefix may be an old form, which is preserved only in Gundjeihmi, Jawoyn, Maung, and Warray. However, it is only in Jawoyn and Warray that the class associated with this prefix form is focally a part noun class. The original function of this prefix, and its relationship with the *mV(n)-* prefixes, remain to be established.

2.2 Non-past verbal reduplication with monosyllabic verbs

The GN languages show two patterns of reduplication in the Non-Past with monosyllabic verbs. Reduplication in Bininj Gun-wok, Ngalakgan, Ngandi, and Rembarrnga involves a disyllabic reduplicant. Reduplication in Jawoyn, Uwinymil, and Warray involves a monosyllabic reduplicant. Most GN languages have a range of disyllabic reduplication patterns, which signal various kinds of imperfective meanings (iterativity etc.). The particular pattern found with monosyllables in Bininj Gun-wok, Ngalakgan, Ngandi, and Rembarrnga is a subclass within this more general disyllabic reduplication pattern.

In Bininj Gun-wok (Evans 1995:758; Evans 2003), reduplication of monosyllabic verbs conveys an iterative meaning and is found in all tenses. The Bininj Gun-wok reduplication pattern is illustrated in Table 2.

Table 2: Verbal reduplication patterns in Bininj Gun-wok

Base		Reduplication
tu-ng	'scold-NP'	*tungu-tu-ng*
to-y	'strike-PP'	*tongo-to-y*
tany	'stand-PI'	*tanga-tany*
wo-n	'give-NP'	*wono-wo-n*

The reduplication pattern found in Rembarrnga (McKay 1975:198–199) appears to be related both formally and functionally to that found in Bininj Gun-wok.

Table 3: Verbal reduplication patterns in Rembarrnga

Base		Reduplication
rne-ny	'cook-PP'	*rneye-rne-ny*
ru-n	'cry-PRES'	*runu-ru-n*

The reduplication apparently marks a variety of essentially iconic functions (iteration, durativity, emphasis, progressive McKay 1975:206–211).

Verbal reduplication in Ngandi appears to be related to that found in Bininj Gun-wok and Rembarrnga.

Table 4: Verbal reduplication patterns in Ngandi

Base		Reduplication
nga-n	'hear-FUT'	*ngana-nga-n*
tho-ngi	'chop-PI'	*thongi-tho-ngi*

The reduplication indicates repetition, distribution and continuity (Heath 1978b:14).

In Ngalakgan, verbal reduplication is lexicalised (Merlan 1983:115–119). In the Non-Past, monosyllabic verbs show the same pattern as that found in Bininj Gun-wok, Ngandi, and Rembarrnga. This is illustrated with the paradigms of *ngu* 'to eat' and *pu* 'to hit' in Table 5.

A number of verbs have a reduplicated Present tense form. This reduplicated Present tense form either varies with an unreduplicated form, as with *ngu* 'to eat', or is the sole Present tense form, as with *pu* 'to hit'. The disyllabic reduplicant appearing in these Present tense forms has the same structure found in Bininj Gun-wok, Ngandi, and Rembarrnga.

Table 5: Verbal reduplication patterns in Ngalakgan

	'to eat'	'to hit'
Past Perfective	*ngo-winy*	*poq-po*
Past Imperfective	*ngu-niny*	*pu-niny*
Present	*ngu-n*, ***ngunu-ngu-n***	***punu-pu-n***
Evitative/Imperative	*ngu-n*	*pu-n*
Future	*ngu-na*	*pu-na*
Potential	*ngu-ni*	*pu-ni*

By contrast, the reduplicant in Jawoyn, Uwinymil and Warray is a monosyllable. In Warray the reduplicated form is used in the present tense and as an emphatic future; the simple form is used as an unmarked future.

(3) *ka-nga-n* — *ka-ngan-nga-n*
NP-listen-NP — NP-RED-listen-NP
'he will listen to him' — 'he is listening to him, he will really listen to him'

The formal relationship between the simple and reduplicated forms in Warray is in all cases that of a regular complete reduplication of the verb. The system in Uwinymil appears to be similar.

(4) *ne-rre-na-n* — *arn-na(n)-na-n*
2PL-PLS-see-NP — 1SGO-RED-see-NP
'you mob will see him.' — 'you/he are looking at me.'

(5) *wunek at-pe-n* — *narn-pen-pe-n*
later 1SGS-hit-NP — 2PLO-RED-hit-NP
'I will hit him later.' — 'He will (really) belt you mob.'

The reduplications appear to be regular, allowing for some inaccuracies in the materials. It also appears that reduplication distinguishes the present, and possibly the emphatic future, from the general future for all verbs in Uwinymil (polysyllabic verbs use other reduplication patterns).

Jawoyn differs from Uwinymil and Warray in two ways. Firstly, there is no contrast in meaning between the simple and reduplicated forms. The two are simply variants of the Non-Past form. Secondly in Jawoyn some of the reduplications are formally irregular.

Table 6: Jawoyn reduplicated forms in contrast to Warray

	Jawoyn		Warray	
	Simple	Reduplication	Simple	Reduplication
'to drink'	*pi*	*piwi*	*pi-rl*	*pirl-pi-rl*
'to get'	*ma-ng*	*mama-ng*	*ma-ny*	*many-ma-ny*
'to give'	*wo-n*	*wonwo-n ~ wonko-n*	*wu-n*	*wun-wu-n*
'to hear'	*nga-n*	*ngannga-n*	*nga-n*	*ngan-nga-n*
'to hit'	*bu-n*	*bunbu-n*	*bu-n*	*bun-bu-n*
'to see'	*rna-n*	*rnana-n*	*rna-n*	*rnan-na-n*
'to sit'	*rni*	*rni-rni*	*rni*	*rni-rni*
'to take'	*ka-n*[1]	*kanka-n*	*ka-n*	*kan-ka-n*

The predicted reduplications in Jawoyn for 'to drink', 'to get' and 'to see' would be **pipi*, **mangmang* and **rnannan* respectively. The attested forms *piwi*, *mamang* and *rnanan* may be related to these predicted forms. The change **pipi* > *piwi* involves medial lenition, which is a well-attested process in Jawoyn (Harvey this volume, Chapter 8). The appearance of lenition in this form argues that the innovation of this kind of monosyllabic reduplication preceded the sound change of medial lenition.

The change **mangmang* > *mamang* appears to involve two factors. One factor is the markedness of nasal + nasal clusters. Among Australian languages, sonorant + obstruent clusters are the least marked type of clusters in terms of manner of articulation (Hamilton 1996:155–159). Consequently, nasal + nasal clusters are a marked cluster type. The other factor is the status of the boundary between the base and reduplicant in the reduplicated form. This boundary was originally a clearcut boundary, and the reduplicated form had a distinct meaning from the non-reduplicated form. Australian languages generally allow a wider range of clusters across morphological boundaries than they do intramorphemically (Hamilton 1996:19). This is true of all the GN languages, including Jawoyn. When verbal monosyllabic reduplication ceased to have a distinctive function in Jawoyn, this nasal + nasal cluster, which had been clearly *inter*morphemic, effectively became intramorphemic. In this circumstance, we may expect more highly marked configurations to be replaced by related, but less marked, configurations. This replacement process will not necessarily be regular (Hamilton 1996:25–26). In this case, the related, and less marked, configuration was created by deletion of the coda portion of the cluster.

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[1] The Jawoyn forms *kan* and *kankan* actually mean 'to go'. However comparative evidence indicates that 'to take' is the original meaning (Alpher, Evans & Harvey this volume).

The change **rnannan* > *rnanan* involves all of these factors, and there is also the fact that the proto-form involved a geminate nasal. Jawoyn like all GN languages does not permit geminate sonorants intra-morphemically. The *wonkon* variant of 'to give', which involves an irregular fortition **wonwon* > *wonkon*, may be explained by the same factors. Nasal + glide clusters are the most marked type of clusters from the perspective of manner of articulation (Hamilton 1996:181). Consequently, a fortition changing this most marked cluster type to the least marked sonorant + obstruent type accords with the changes affecting the other reduplicated constructions in Jawoyn.

The irregular and lexicalised reduplication system of Jawoyn presumably derives from a productive system with the same structure as that found in Uwinymil and Warray. There is some evidence from Warray, that the monosyllabic reduplication pattern is an innovation, replacing an earlier disyllabic reduplication pattern with the structure found in Bininj Gun-wok, Ngalakgan, Ngandi, and Rembarrnga. In Warray, the Non-Past generally serves as the stem for the Past Imperfective, and this pattern can be reconstructed for pGN (Alpher, Evans & Harvey this volume).

Table 7: Past Imperfectives with reduplicated stem — highly irregular, and evidently archaic

Base		Reduplication	
pi-rl	'drink-NP'	*pirl-pi-rl-ang*	'drink-PI'
pe(-rr)	'bite-NP'	*pit-pi-rr-iny*	'bite-PI'
ca-rl	'eat-NP'	*cu-ci-rr-iny, carl-ca-rl-any*	'eat-PI'
ci-Ø	'stand-NP'	*ci-c-iny*	'stand-PI'
rni-Ø	'sit-NP'	*rni-n-iny*	'sit-PI'
yu-Ø	'lie-NP'	*yu-y-iny*	'lie-PI'

Generally, it is the simplex Non-Past form which serves as the stem. However, there are a few highly irregular, and evidently archaic, Past Imperfectives where the stem is a reduplicated Non-Past form (see Table 7). In most cases, the reduplicant is a monosyllable.

However, there are two verbs, where the Past Imperfective appears to be based on a Non-Past form with a disyllabic reduplicant.

Table 8: PI apparently based on NP with disyllabic reduplicant

Base		Reduplication	
yi-ny	'go-NP'	*yungo-y-iny*	'go-PI'
ci-ny	'do/say-NP'	*cungu-c-iny*	'do/say-PI'

The 'go' verb does not have correspondents elsewhere among the GN languages, but the 'do/say' verb does (Alpher, Evans & Harvey this volume).

Table 9: Reflexes of **THu* 'to tell off'

pGN	'to tell off'	PP *THu-y	PI *THu-ng-iny	NP *THu-ng
Dalabon	'to tell off'	*tu-ny*	*tu-nginy*	*tu-ng*
Jawoyn	'to do, to say'	*cu-y*	*cu-ngay*	*cu(yu)-ng*
Mangarrayi	'to swear at'	*cu-c*	*cu-nyi*	*cu-k*
Bininj Gun-wok	'to scold, to tell off'	*tu-y*	*tu-ngi*	*tu-ng*
Ngandi	'verbaliser'	*-thi*	*-thu-ngi*	*-thu-ng* (Fut)
Warray	'to do, to say'	*ci-yi*	*cunguc-iny*	*ci-ny*

The Warray PI form is highly irregular, within the synchronic context of the Warray paradigm. However, from a diachronic perspective, it derives from **THungu-THu-ng-iny*, with an irregular, but unsurprising, reduction from a quadrisyllabic form to a trisyllabic form. The Bininj Gun-wok reduplicant for 'scold-NP' is *tungu-tu-ng*, providing evidence that **THungu-THu-ng* can be reconstructed as the reduplicated form of the Non-Past for pGN.

There is no equivalent evidence supporting the reconstruction of monosyllabic reduplication for pGN. Consequently, monosyllabic reduplication appears to be an innovation common to Jawoyn, Uwinymil, and Warray. While these three languages show the same basic reduplication pattern, there is one difference between Uwinymil, on the one hand, and Jawoyn and Warray, on the other.

Table 10: Monosyllabic reduplication in Jawoyn, Uwinymil, and Warray

	Uwinymil	Jawoyn	Warray
'they are sitting'	*pi-rni-rni*	*pu-rni-rni*	*ka-pa-rni-rni*
'he is sitting'	*karni-ka-rni*	*ka-rni-rni*	*ka-rni-rni*

In Jawoyn and Warray, it is only the verb which reduplicates in all cases. However in Uwinymil, forms with a 3sgS do not show monosyllabic reduplication. Rather, they show a disyllabic reduplication, which includes the prefix *ka-*. This argues that Warray and Jawoyn are slightly closer to each other than either is to Uwinymil.

2.3 Other affixes

Apart from the noun class prefix and the reduplicative prefix, discussed preceding, there are five other affixes which appear only in Jawoyn and Warray. They are listed in Table 11.

Table 11: Five affixes exclusive to Jawoyn and Warray

		Jawoyn	Warray
**-cangki*		*-cangki* 'plural/collective'	*-cangki* 'really (intensifier)'
**ke-*	'directional'	*ke-*	*ke-/ki-*
**-luk*	'locative case'	*-luk*	*-lik*
**-wayen*	'temporal suffix'	*-wayen*	*-wayin*
**-wirru*	'properly'	*-wirr*	*-wirru*

While the borrowing of affixes is less likely than the borrowing of roots, the possibility of borrowing must nonetheless still be considered. For most of these forms, there is evidence which argues against borrowing. The **-cangki* forms have rather different meanings, and consequently it is unlikely that borrowing is involved. The **-wirru* 'properly' suffixes show an unpredictable phonological difference which again makes borrowing unlikely. The **ke-* 'directional' affix has only a single lexicalised reflex in Warray.

(6)	**ke/ki-ngana-wu*	*ngana-wu*	*kenganawu/kinganawu*
		there-OBL	'over.there'

The form *kenganawu ~ kinganawu* 'over there' is not synchronically analysable in Warray. However, the existence of *ngana-wu*, which is the Oblique stem form of 'there', and the fact that the Jawoyn *ke-* prefix is usually allative in meaning, argue that *kenganawu ~ kinganawu* is to be historically analysed as shown in (6).

Heath (1978a:75–86) argues that case markers can be subject to diffusion, and consequently this possibility must be considered for the Jawoyn and Warray locative case markers. There is evidence for Warray, at least, that the locative case marker is of some time depth in the language. The *-lik* locative case marker is a word-level suffix in Warray, attaching without allomorphic variation in the form of either the suffix or the stem. However, there are two irregular forms which appear to have involved this suffix historically. One of these involves the noun *le* 'camp, country, place'.

(7)	*le*	*lerrik(-lik)*	*lerrik-yang*
	'camp'	camp-LOC	camp-ABL

(8) **rerr* 'camp': Bininj Gun-wok *ret*, Jawoyn *lerr* (*let-* in compounds), Ngalakgan *rerre*, Ngandi *rerr*, Warray *le*

As illustrated in (7), this noun has an irregular stem *lerrik* in the locational cases. Locative case meanings may be conveyed by this stem form alone, or the regular locative case suffix may be attached as well. Comparison of related forms for the root 'camp' in other GN languages in (8) argues that the irregular locational stem in Warray derives historically from **lerr-lik*, with an unsurprising reduction of a liquid cluster. The other irregular form which appears to have involved the locative case marker is a demonstrative form *angilak* 'hereabouts'.

(9)	**angi-lak*	*angi*	*angilak(-lik)*
		here	hereabouts(-LOC)

As shown in (9), the basic 'here' demonstrative is *angi*. The *angilak* 'hereabouts' demonstrative is presumably historically *angi* + *lak*. The locative case marker is an obvious source for the *lak* component, though the vowel is problematic. However, in relation to the vowel, we may consider the following correspondence set.

(10) **rak* 'camp': Kungarakany *lok*, Kamu *tak*, Malak-Malak *tek*, Matngele *tak*, Umbugarla *rak*, Uwinymil *rak*, Wagiman *laq-an*, Wardaman *laklan*

The Jawoyn and Warray locative case markers may be related to the forms in this set, in which case the Warray demonstrative form *angilak* would preserve the original vowel. However, a relationship between the forms in (10), and the Jawoyn and Warray locative case markers remains to be established. The semantic paths for the development from a noun meaning 'camp, country, place' to a locative case marker are not self-evident.

The irregular locational stem *lerrik* for 'camp' provides strong evidence for the antiquity of the locative case marker in Warray. The demonstrative form *angilak* 'hereabouts' provides somewhat less strong evidence for the same conclusion. There does not appear to be equivalent evidence for the antiquity of the locative case marker in Jawoyn. Consequently, borrowing into Jawoyn from Warray is a possibility. However, any such borrowing would have had to precede the irregular **u > i/_k, q* sound change in Warray (Harvey this volume, Chapter 8). Further, it should be noted that there is no positive evidence for borrowing into Jawoyn. Jawoyn does not show remnantal traces of some earlier locative case suffix.

The temporal suffixes, *-wayen* in Jawoyn and *-wayin* in Warray, could again involve borrowing. In this case, there is no evidence as to the antiquity of this suffix in either language, nor are there remnantal traces of some earlier suffix that it has replaced in either language.

Given that the diachronic status of neither the locative case, nor the temporal suffix, can be resolved by specific evidence, it becomes necessary to invoke more general considerations as to whether borrowing or inheritance is the default explanation for forms which appear in more than one language. I take inheritance to be the default explanation, in the absence of positive evidence for borrowing. Consequently, I analyse the related locative case markers and temporal suffixes of Jawoyn and Warray as being inherited from a common ancestral proto-language.

3 Wulwulam

It having been established that Jawoyn and Warray are most closely related to one another, it becomes necessary to consider the information on Wulwulam, the extinct and virtually unrecorded language variety which intervened between them. 'Wulwullam' is the name given by Spencer (1914:6–7, 199–200) in his work 'Native Tribes of the Northern Territory of Australia' to the language of the Pine Creek area, but in his fieldnotes[2] he spells the language name 'Wailwullam'. Also in his notes there is a statement that a Warray informant told him that the Pine Creek people were called 'Ungullukman'. Neither of these names were recognised by my Warray informants. In his notes Spencer records that the territory of the Wulwulam included Pine Creek, Burrundie, Mt Wells, and Yam Creek. He records that they met the Warray about Brock's Creek.

The few other older sources which describe the boundary between the Warray and their south-eastern neighbours locate the boundary in the Brock's Creek — Grove Hill area. There is no consistency as to the name of the south-eastern neighbours of the Warray in these sources. Parkhouse (1894:1) in one publication states that the Aggrakundi are the south-eastern neighbours of the Warray. However his Aggrakundi vocabulary is Uwinymil. In another publication (1895:638, map) he places the Uwinymil (Awinmil) around Fountain Head, between the Warray and the Aggrakundi. Basedow (1907:2) refers to the south-eastern neighbours of the Warray as the Agiwallem. The names Aggrakundi and Agiwallem are not now recognised, and so the reference of these names cannot be established.

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2 Spencer's fieldnotes are lodged in the Museum of Victoria.

Table 12: Wulwulam vocabulary

		Analysis	Cognates
'aunt, mWM'	*beok*	/peyok/	
'camp'	*bini*	/pini/	
'child'	*warri*	/warri/	(1166)
'daughter'	*algemundi*	/al-kemunti/	
'elder brother'	*baba*	/papa/	
'elder sister'	*(all)daidja*	/(al-)taca/	
'father'	*aiyuwai*	/a-yuway/	
'FF (recip), MM'	*kagu*	/kaku/	(196)
'husband, MBS'	*kakak*	/kakkak/	(192)
'man'	*gnall*	/ng~ny~nal/	(638)
'mDD'	*djamwin*	/cami~uny/	(161)
'mDDD'	*amirg/quell*[3]	/a-mirrkkel/	
'mWF'	*meimei*	/mimi/	*mimi* 'uncle' (Warray)
'mother'	*aldumin*	/al-tumin~ny/	
'MMM'	*giwa(r)k*	/kiwa(rr)k/	
'my'	*norko*	/ngorrk-ko(-wo)/	
'one'	*unjerring*	/an-cerring/	(66)
'son'	*lagayan*	/lagkayen/	(411)
'two'	*billawilla*	/pila-wila/	
'wife'	*(all)geirl*	/(al-)kel/	(194)
'woman'	*aldumong*	/al-tumong/	
'wC'	*mammam*	/mamam/	*mamam* 'child' (Warray)
'wSS'	*djabuit*	/capuc/	*capuc* 'MF' (Kamu, Wagiman)
'wDDD'	*morlau*	/morlaw/	
'yB'	*auwo/urdu*[4]	/a-wo~urtu/	
'yZ'	*(all)auwurdu*	/al-wo~urtu/	
'wBW ~ wHZ'	*ng(n)oingyor geirl*	/ngonyorr kel/	? 'his wife' (meaning of *ng(n)oingyor* is unclear)

The south-western neighbours of the Wulwulam were the Wagiman. No definite boundaries can be established, especially as the Wagiman have succeeded to all Wulwulam land west of Pine Creek. According to Warray and Wagiman people Hayes Creek and Butterfly/Douglas Gorge are in traditional Wagiman country. To the south-east, Spencer states that the area from Pine Creek to Katherine was associated with the Jawoyn language. However in the early 1900s, while the area around the upper Ferguson river was apparently associated with the Ngarlahmi dialect of Jawoyn, the area immediately to the south of Pine Creek on the Cullen and mid-Ferguson was associated with the Dagoman-speaking Gayn-jiwortbort clan.

3 Spencer has the /g/ and the /q/ as alternatives.

4 Spencer has /o/ and /u/ as alternatives.

Wulwulam appears to have bordered directly onto Jawoyn in the west. The upper Mary River above Moline appears to be associated with the Jawoyn language.[5]

The only material available on Wulwulam is a couple of pages in Spencer's notes, collected in 1912 when he passed through Pine Creek. The language materials are set out in Table 12, with putative phonological and morphological analysis. Numbered cognates refer to the sets in Harvey (this volume, Chapter 8).

This material does not contain any verb forms, and consequently its value in determining the relationships of Wulwulam is limited. The materials do however suggest that Wulwulam had a noun class system as set out here:

Wulwulam noun class system, as suggested by evidence in Table 12.

I	*a-*	Some human male nouns
II	*al-*	Some human female nouns
III	*an-*	This prefix appears on the numeral 'one'

This noun class system is cognate with that found in Jawoyn and Warray (§2.1). One of the differences between Jawoyn and Warray is that the Jawoyn class prefixes are consonant-initial: *na-* I, *ngal-* II, *ngan-* III, whereas the Warray prefixes are vowel-initial: *a-* I, *al-* II, *an-* III. Spencer records all three Wulwulam class markers as vowel-initial. In the case of the *al-* and *an-* markers, this is not of great significance as an initial velar nasal could easily have been missed by Spencer. Indeed it may commonly have been elided by speakers. However the situation with the masculine class marker *(n)a-* is rather different. Spencer did not normally miss initial apical nasals, and the elision of initial apical nasals is a much rarer pattern than the elision of initial velar nasals. On balance therefore it appears likely that the three class markers were vowel-initial in Wulwulam as in Warray, but not in Jawoyn.

There is also some lexical semantic evidence of Wulwulam being closer to Warray than to Jawoyn. This evidence comes from the correspondence sets listed in (11) and (12).

(11) **ka(k)kak* 'parallel grandparent': D *kakkak* 'MM', Ja *kakak* 'MM', M *kakak*, BGW *kakkak* 'parallel grandparent, focally MM', Ngan *kokkok* 'MM', R *kakkak* 'parallel grandparent, focally MM', ?W *kakkak* 'close non-marriageable cross cousin' (Marra *kaka*, Warndarrang *kaka*) — Wulwulam *kakkak* 'husband, MBS'

(12) **Nal*: Ja *rnal* 'countryman', W *rnal* 'man' — Wulwulam *ng~ny~nal* 'man' (Spencer *gnall*)

The meaning of the proto-form **ka(k)kak* is evidently to be reconstructed as 'parallel grandparent' (probably MM). If the Warray and Wulwulam forms are related to the forms in the other languages, then they share shift of reference to the cousin category. There is no evidence as to the historical shifts of meaning in (12). However, if Spencer's transcription does represent *nal*, then the Wulwulam form has the meaning found in Warray, rather than that found in Jawoyn.

While my Warray consultants did not recognise either of the names Wulwulam or Ungullukman, they did know of a language variety called Ngorrkgowo. This language variety was apparently either dialectal with Warray, or very closely related to it. One of my consultants heard Ngorrkgowo spoken as a young child and tentatively offered the following

5 This information was supplied by Francesca Merlan.

items as Ngorrkgowo (My consultant was uncertain about some items — these are preceded by a question mark).

Table 13: Ngorrkgowo vocabulary

Ngorrkgowo		Warray cognate
an-bam	'head'	*an-bam*
pappa	'brother'	*pappa*
? *pipi*	'father'	*pipi*
pippi	'son'	*pippi*
al-tumarru	'old woman'	*al-tumarru*
? *an-karra*	'shin'	*an-karra*
an-kiparr	'back'	*an-kipe*
korrang	'goanna sp.'	*korram*
an-carr	'thigh'	*an-ce*
catpula	'old man'	*catpula*
? *laliny*	'goanna sp.'	*laliny*
lerr-lik	'camp-LOC'	*lerrik*
al-marnrtuparr	'woman'	*al-marnrtupa*
mimi	'uncle'	*mimi*
al-mulyawak	'sister'	*al-mulyawak*
muya	'tucker'	*muya*
an-naparr	'hand'	*an-nepe*
? *nal*	'man'	*nal*
ngirri	'dog'	*ngirri*
an-nguparr	'foot'	*an-ngupe*
wang	'meat'	*wang*
warrang	'mother'	**karrang* 'mother' (Harvey this volume, Chapter 8)
wurrk	'fire'	*wek*

This list suggests that Ngorrkgowo was dialectal with Warray. However, allowance must be made for the almost certain intrusion of Warray items. One difference between Warray and Ngorrkgowo is that Ngorrkgowo had not undergone the **Vrr > e* shift which affected Warray (Harvey this volume, Chapter 8). According to my consultants the word *ngorrkkowo* means 'my, mine' in the *Ngorrkgowo* language. The form *ngorrkko(wo)* parallels the Warray form for 'my, mine' which is *ngek-ku(-wu)*, consisting of the root *ngek* 'I', followed by the Oblique suffix *-ku*, followed by the Dative suffix *-wu*. The Warray Oblique suffix is historically derived from the Dative.

The sequence *-kowo* in the Wulwulam form may be viewed as a similar double reflex of the Dative **-ku*, paralleling the Warray double reflex *-ku-wu*. The proto-form of the 1sg pronoun for Warray is **ngarrk*. The initial sequence *ngorrk* in the Wulwulam form may be derived from this proto-form by assimilation under the influence of *-kowo*.

My consultants did not know where the country of the Ngorrkgowo language was. However the country on the east towards Pine Creek is the only possibility as the ownership of all other areas neighbouring Warray country is known. As such, there is a considerable

overlap between the countries associated with Ngorrkgowo and Wulwulam. This naturally raises the question of the relationship between the two. The principal possibilities are that the two names are alternate names for the same or similar language varieties, or that they refer to distinct language varieties.

In support of the first hypothesis, there is the Wulwulam form for 'my, mine' *norko* recorded by Spencer. Allowing for a not uncommon confusion of initial nasals, it would appear that this is *ngorrkkowo*. However, in support of the second hypothesis, there is the fact that the word list recorded by Spencer shows only 11 cognates out of 28 items, suggesting that Wulwulam was a separate language.

The question of whether Wulwulam was a distinct language from Warray, or in a dialectal relationship with it, and remembered by my consultants as Ngorrkgowo, cannot be resolved on the limited materials available. For the purposes of this paper I treat Wulwulam as a separate language.

4 Conclusion

While Jawoyn and Warray are most closely related to one another, they do not constitute a tightly bounded subgroup. Rather, there are regional patterns which do not overlap exactly with one another. Within each particular pattern, Jawoyn and Warray show the greatest degree of overall commonality with one another, but they also show commonalities with other languages. This focusing of commonalities presumably also included the language varieties intervening between Jawoyn and Warray. There was at least one intervening language variety, and probably more. The exact status of these language varieties cannot now be established, but the very slender evidence available suggests that they showed greater commonality with Warray than with Jawoyn.

Appendix

Correspondence sets appearing only in Jawoyn and Warray, or only in Jawoyn and Bininj Gun-wok.

VERBS:

Jawoyn-Warray (N=2)

**Laki-* 'to throw' : Ja *rlayi-*, W *rlaki-*, **pi-* 'to drink' : Ja *pi-*, W *pi-*

COVERBS:

Jawoyn-Warray (N=17)

**calq-* 'to flame up' : Ja *calq-*, W *calq-*, **cVp-* 'to drip' : Ja *cep-*, W *cup-*, **Lal/rlaq-* 'to tear' : Ja *rlarlaq-*, W *rlalaq-*, **mal/rr-* 'poison' : Ja *marr-*, W *mal-*, **mic-* : Ja *mic-co(yo)-* 'to not know'(*co(yo)-* 'to crush' as independent verb), W *mic-na-* 'to know' (*na* 'to see' as independent verb), **moc-* 'to mix' : Ja *moc-*, W *muc-*, **morlk-* 'secretly' : Ja *morlk-*, W *mok-*, **ngec-* 'to ask' : Ja *ngec-*, W *ngic-wu-*, **pam-ma* 'to bake' : Ja *pa-ma*, W *pam-ma*, **porr(q)-* 'to snore' : Ja *porr-*, W *porrq-*, **Terreng-* 'to attach to' : Ja *rterreng-wo-* 'to attach to, to put on', W *rtirring-la-* 'to thread on', **Tiqtiri(ny)-* 'to itch' : Ja *rtiqtiri(ny)-*, W *rtiti-*, **Tolom-pu-* 'to cover' : Ja *rtolom-pu-*, W *rtulum-pu-*, **Tolq-* : Ja *rtolq-* 'to

break, to snap (tr)', W *rtulq-* 'to burst', **Tum-pay(ngq)-* 'to open eye' : Ja *rtum-pay-*, W *rtum-pay(ng)q-*, **wart-pu-* 'to skin' : Ja *wart-pu-*, W *wart-pu-*, **yoc-* 'to go a long way' : Ja *yoc-*, W *yuc-*

Jawoyn-Bininj Gun-wok (N=21)

**celq-* 'to drip' : Ja *celq-*, BGW *celq-*, **cirrk-ka-* 'to push' : Ja *cirrk-ka-*, BGW *cirrk-ka-*, **Lurl-* 'to swell up' : Ja *rlurl-*, BGW *lurl-*, **marri-* 'hunger' : Ja *marri-*, BGW *marri-*, **marrk-* 'to believe' : Ja *ngani-marrk-*, BGW *marrk-*, **marrq-* 'to open' : Ja *marrq-*, BGW *marrq-*, **martuq-* 'to flash (of lightening)' : Ja *martuq-*, BGW *martuqmartu-*, **mik-* 'to use m-in-law language' : Ja *mik-*, BGW *mik-*, **morna-* 'to carry on shoulder' : Ja *morna-*, BGW *morne-*, **ngort-* 'to suck blood (native doctor as curative practice) : Ja *ngort-*, BGW *ngort*, **nguk-tirrq-* 'to fart' : Ja *nguk-tirrq-*, BGW *nguk-tirrq-*, **palq-* 'to block' : Ja *palq-*, BGW *palq-*, **parrk/q-* 'to break/crack' : Ja *parrq-* 'to break (intr)', BGW *parrk-* 'to crack', **pingq-* 'to go tsk' : Ja *pingqping-*, BGW *pingq-*, **puk-* 'to show' : Ja *puk-*, BGW *puk-*, **punyq-* 'to kiss' : Ja *punyq-*, BGW *punyq-*, **warow-* 'to toss' : Ja *warow-* 'to toss', BGW *warow-* 'to swing out', **wayalq-* 'to light a fire' : Ja *wayalq-*, BGW *wayalq-*, **worrumpok-ka-* 'to chase' : Ja *worrompok-ka-*, BGW *worrumpok-ka-*, **wurrwurr-* : Ja *wurrwurr-* 'to shake', BGW *wurrwurr-* 'to feel giddy', **yurr-* 'to share' : Ja *yurr-* 'to share', BGW *yurrmi-wo-* 'to swap'

ADJECTIVES:

Jawoyn - Warray 13

**ceccerr* : Ja *ceccerr* 'big [avoidance]', W *ceccerr* 'lots', **-kamo* 'hard, tough' : Ja *-kamo*, W *-kamu*, **-kereckerec* 'clean' : Ja *-kereckerec*, W *-kackac* (of water), **kul(p)pam* 'many' : Ja *kulppam* 'three, several', W *-kupam* 'lots', **-malmal* : Ja *-malmal* 'young person', W *-malmal* 'soft', **-paliwu* 'wide' : Ja *-paliwu* 'numerous', W *-pali-wu* 'wide' (note Jawoyn *-palpmi* 'wide, numerous'), **-pal/rlpmi* : Ja *-palpmi* 'wide, numerous', W *-parlpmi* 'shallow', **-piyak* 'dried up, wrinkled' : Ja *-piyak*, W *-piyak*, **-rtek* 'good' : Ja *-rlek*, W *-rtek* (only in compound *a-wang-rtek-ku* 'a good hunter'), **Tirnrtirn* 'holey' : Ja *-rtirnrtirn*, W *-rtintin*, **-walak* 'hot' : Ja *-wolawolak*, W *-wa/olak*, **-wirlang* : Ja *-wirlang* 'hard, strong', W *-wirlang* 'narrow', **-wirra/ung* 'different' : Ja *-wirrung*, W *-wirrang*

Jawoyn-Bininj Gun-wok 1

**kurtuk* 'black' : Ja *kurukkuruk*, BGW *kurtuk*

BODY PARTS:

Jawoyn-Warray 8

**-camkalk* 'jaw' : Ja *-camkalk*, W *-camk/ngak*, **-kokmele* 'cheek' : Ja *-kokmele*, W *-kukmili*, **-kuny* 'soul' : Ja *-kuny*, W *-kuny*, **-ngoro* 'ankle' : Ja *-ngoro*, W *-nguru*, **-rtum* 'eye' : Ja *-rtum*, W *-rtum*, **Tum-mira* 'tears' : Ja *rtum-miri*, W *rtum-mila*, **-wik* 'skin' : Ja *-wik*, W *-wik*, **-yel* : Ja *-yil* 'large muscle on leg', W *-yel* 'flesh'

Jawoyn-Bininj Gun-wok 4

**-kalpam* 'calf' : Ja *-kalwam*, BGW *-kalpam*, **-ngerng* 'pouch' : Ja *-ngerng*, BGW *-ngeng*, **-pork* 'track' : Ja *-pork*, BGW *-pok*, **To/uk* 'semen' : Ja *-rtok*, BGW *-tuk*

MATERIAL ITEMS:

Jawoyn-Warray 2

**ngat/rterr* 'fishing line' : Ja *ngarterr*, W *ngiterr*, **welkmo* 'firestick' : Ja *welkmo*, W *wekmu*

Jawoyn-Bininj Gun-wok 5

**Lama* 'shovel spear' : Ja *rlama*, BGW *lama*, **murr(k)ka* 'woven item' : Ja *murrkka* 'dillybag', BGW *murrka* 'hand-held string bag', **walapi* 'fishnet' : Ja *walapi*, BGW *walapi*, **yakko* 'dillybag' : Ja *yakko*, BGW *yakko*, **yipalirr* 'dillybag' : Ja *yipalirr*, BGW *yiparlirr*

NATURAL SPECIES:

Jawoyn-Warray 6

**murrumpic* 'dragonfly' : Ja *murrumpic*, W *murrumpic*, **Norn* 'water rat' : Ja *rnorn*, W *rnurn*, **pilkpilk* 'galah' : Ja *pilkpilk*, W *pekpek*, **Tarnrtamarra* 'lizard sp.' : Ja *rtarnrtamarr*, W *rtarnrtamarra*, **Tirringkil* 'tree sp.' : Ja *rtirringkil*, W *rlirringkil*, **Torriya* 'rock wallaby' : Ja *rtorriya*, W *rtorriya*

Jawoyn-Bininj Gun-wok 27

**carrapuypuy* 'floater insect' : Ja *carrawuywuy*, BGW *carrapuypuy*, **cartuk* 'red apple' : Ja *caruk*, BGW *-cartuk*, **cokparl* 'hornet' : Ja *cokparl*, BGW *cakparl*, **cularr* 'goanna sp.' : Ja *cularr*, BGW *cularr*, **cumuk* : Ja *cumuk* 'Canthium attenuatum', BGW *tumuk* 'Exocarpus latifolius', **karnma* 'big bandicoot' : Ja *karnma*, BGW *karnma*, **karrng* 'insect sp.' : Ja *karrng* 'bee (generic)', BGW *karrngcalarrk* 'large green ant', *karrngkile(q)* 'small green ant', **karterre* 'bee sp.' : Ja *karterre*, BGW *karterre*, **kongkong* 'plant sp.' : Ja *kongkong* 'tree sp.', BGW *-kongkong* 'bush potato', **Nornorrmi* 'insect sp.' : Ja *rnornorrmi*, BGW *nornorrmi*, **kurr/rat/rtpa* 'bush string' : Ja *kuratpa*, BGW *kurrartpa*, **mamtak* 'Canthium lucidum' : Ja *mamtakmorakmo*, BGW *mamrtak*, **mutmurr* 'fly sp.' : Ja *mutmurr*, BGW *mutmut*, **Na-cik* 'frogmouth' : Ja *na-cik*, BGW *na-cik*, **ngakngak* 'grey-crowned babbler' : Ja *ngakngak*, BGW *ngakngak*, **parna(c)ca* 'tree sp.' : Ja *parnacca*, BGW *parnaca*, **parraca* 'kookaburra' : Ja *parraya*, BGW *parraca*, **parri* : Ja *parri* 'native cat', BGW *parri* 'native rat', **pel(k)kangqmi* 'frog sp.' : Ja *pelkkangqmi*, BGW *pelkangqmi*, **poccalk* 'archer fish' : Ja *poccalk*, BGW *poccalk*, **Talak* 'sand goanna' : Ja *rtalak*, BGW *talak*, **Tickanku* 'yam sp.' : Ja *rtickanku*, BGW *tickanku*, **Torok* 'tree sp.' : Ja *rtorok*, BGW *-torok*, **wirik* 'possum' : Ja *wirk*, BGW *wi/urik*, **wirriwirriyak* 'black-faced cuckoo shrike' : Ja *wirrwiyak*, BGW *wirriwirriyak*, **yamic* 'grasshopper sp.' : Ja *yimicmi*, BGW *yamic*, **yerr/riny* 'bird sp.' : Ja *yerriny* 'mopoke', BGW *yeriny* 'kite'

OTHER NOMINALS:

Jawoyn-Warray 10

**-camorrwu* 'ritual guardian' : Ja *-camorrwu*, W *-camurru*, **kVrrang* 'two' : Ja *catkorrang*, W *kirrang-qlul*, **Loywa* 'red ochre' : Ja *rloywa*, W *rloywa*, **mac* 'wind' : Ja *mac*, W *mac*, **merre* 'north' : Ja *merre*, W *merri*, **Nal* : Ja *rnal* 'countryman', W *rnal* 'man', **pemarrk* 'dew' : Ja *pemarrk*, W *pimek*, **Tum-ke(k)ka* 'asleep' : Ja *rtum-kekka*, W *rtumkika*, **wang* 'meat' : Ja *wang*, W *wang*, **-won* 'female' : Ja *-won*, W *-wun*

Jawoyn-Bininj Gun-wok 15

**kakkali* 'spouse' : Ja *kakkali*, BGW *kakkali*, **kurl* 'cloud' : Ja *kurl*, BGW *kurl*, **Lakkayen* 'initiated young man' : Ja *rlakkayen*, BGW *lakkayin*, **mamurrng* 'ceremony' : Ja *mamurrng*, BGW *mamurrng*, **mayompol* 'Milky Way' : Ja *mayompol* (also road), BGW *mayompol*, **mokurrkurr* 'clan' : Ja *mowurrwurr*, BGW *-mokurrkurr*, **morla* : Ja *morla(wk)* 'father's cross-cousin', BGW *morla* 'mother's older sister', **-palukkayin* 'ritual sponsor' : Ja *-palukkayin*, BGW *-palukkayin*, **pany* 'smell' : Ja *pany*, BGW *pany*, **-parlac* : Ja *-parlac* 'level ground', BGW *-palac* 'clear ground', **parrarn* : Ja *parrarn* 'rockhole', BGW *parrarn* 'end of cliff', **powk* 'flat country, floodplain' : Ja *powk*, BGW *powk*, **Tilk-* : Ja *tilk* 'sharp edge', BGW *tilk-* 'to carve', **warrarlarla* 'leaves for rubbing corpse' : Ja *warrarlarla*, BGW *warrarlarla*, **yony* 'ground' : Ja *yony* 'ground', BGW (respect variety) *-yony* 'country'

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* Spencer's fieldnotes are lodged in the Museum of Victoria.

11 *Proto Gunwinyguan verb suffixes*

BARRY ALPHER, NICHOLAS EVANS AND MARK HARVEY

1 Introduction[1]

The study of paradigmatic irregularities is crucial to the genetic subclassification of languages, particularly in language families like Australian, where extensive diffusion of morphological items has sometimes taken place and where phonological conservatism often makes diffusion hard to trace.

In Australian languages, conjugational irregularities of verbs, particularly in the suffixal systems encoding tense, aspect and mood (hereafter TAM),[2] often appear to be the grammatical domain most resistant to borrowing. Even such intense cases of linguistic diffusion as those in eastern Arnhem Land (Heath 1978a), providing as they do evidence both of indirect typological diffusion and of occasional direct diffusion of case markers and pronominal enclitics, do not appear to result in the diffusion of verbal conjugational irregularities.

The comparison of verbal inflectional paradigms was central to Alpher's (1972) study of the subgrouping of the languages of southwestern Cape York Peninsula, and Dixon (1980) again used verbal conjugations as prime evidence for the relatedness of Australian languages. Dixon's chapter on verbal reconstruction proposes that not only is it possible to reconstruct a small set of mostly monosyllabic verbs at the level of 'Proto Australian' (pA), but that it is also possible to reconstruct seven 'conjugation markers' upon which the Tense/Aspect/Mood (henceforth TAM) suffixes of pA and its descendants are based.

Most of the evidence in Dixon (1980) for reconstructing seven pA conjugation markers comes from Pama-Nyungan (hereafter PN) languages.[3] The only nonPN languages he considers are Kunwinjku (K), Ngandi (Ngan) and Rembarrnga (R) — all members of the Gunwinyguan (GN) family. He attributes the lack of conjugation markers in other nonPN languages to elimination following the development of radical morphophonemic alternations in the complex verbal words found in prefixing languages. However, the existence of TAM

1 We thank Brett Baker, Carolyn Coleman, and Rebecca Green for comments on an earlier version of this paper.

2 See I. Green (this volume) for a revealing discussion of conjugational irregularities in Daly *prefix* systems.

3 Note that Dixon himself rejects the existence of PN as a subgroup, both in his 1980 book and in subsequent publications (e.g. Dixon 1997). For further discussion, see the introduction to this volume.

Nicholas Evans, ed. *The non-Pama-Nyungan languages of northern Australia: comparative studies of the continent's most linguistically complex region*, 305–352.
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suffixes not cognate with PN conjugation markers, but shared between many nonPN languages, suggests that loss of an original pA conjugational system may not be the best explanation. An alternative is that, like many of the features claimed as 'Proto Australian' by Dixon, the conjugation marker system is really much more recent, appearing at the emergence of Proto Pama-Nyungan (hereafter pPN), or of the shared ancestor of pPN and GN, but not earlier.

The status of conjugational irregularities in Gunwinyguan is therefore of considerable historical importance, for three main reasons: (a) Dixon's claims for cognacy of conjugation markers between Gunwinyguan and pPN, (b) the relatively close genetic relationship between Gunwinyguan and pPN, and (c) the large number of closely related languages found in the GN group, which allows for a reasonably full morphological reconstruction.

In this study we carry out a partial reconstruction of Gunwinyguan verbal suffixes. The forms we shall reconstruct provide some evidence of cognacy with pPN 'conjugation markers', but we will argue that 'conjugation marker' is a misleading term when applied to Gunwinyguan. Rather, there was a complex set of conjugational irregularities, from which the selection and generalisation of certain forms as analogical bases at a time when pPN was separating from Gunwinyguan would have created a system analysable as having 'conjugation markers'. Sometimes these analogic bases took the past perfective as primary, sometimes the non-past. Some of the PN 'conjugations' do not appear to have cognates in Gunwinyguan. Some recurring segments in Gunwinyguan appear to have cognates in other nonPN languages but not in PN itself; these may prove useful in carrying out wider subgroupings within nonPN. All of these facts, we will conclude, point to the PN conjugational system being an innovation which proceeded by taking certain irregular morphological elements already present as part of a complex paradigm, and analogically reshaping them into a system of conjugation markers.

1.1 Conjugation in Pama-Nyungan: an overview

Because the resemblances of GN and PN verb inflection are at the same time interesting and problematic, a useful preliminary will be to look at verbal inflection in Pama-Nyungan.

PN languages, like GN languages, mark TAM with suffixes to verbs. In most PN languages verb roots fall into two or more sets, or 'conjugations', according to which set of tense suffixes they take. Typically the markers for some but not all of the tense categories of a given verb are morphologically bipartite, with the first part, or 'conjugation marker', recurring in more than one tense category of a given verb root, and the second part, or TAM-ending proper, recurring in the TAM paradigms of other verb roots.

As an example, consider the following partial paradigm from Yir-Yoront:

Table 1: Partial TAM paradigm from Yir-Yoront

	'swim'	'break'	'die'
Purposive	*moyle*	*luwrre*	*warrmlhe*
Past Imperfective	*moylnh*	*luwrrnh*	*warrmlhnh*
Past Perfective	*moy*	*luw*	*warrmll*

The conjugation markers *l*, *rr*, and *lh* recur in the Purposive and Past Imperfective categories, but not the Past Perfective, of the verbs *moy* 'swim', *luw* 'break', and *warrm* 'die', respectively. The tense endings *e* and *nh* mark Purposive and Past Imperfective with any of these verbs, but the Past tense ending is *ll* for *warrm* 'die' and zero for the other two verbs in the sample. Such an arrangement, with regard to the typology of the marking system, is found in enough PN languages to be regarded as proto-typical; the only thing atypical about Yir-Yoront in this regard is that its verb roots have lost the final vowel that is present in cognate verbs in other PN languages. At issue in PN studies, however, is the precise extent to which such a system characterised pPN and the shape of the suffixes to be attributed to the proto-language.

One school of thought (for example Dixon 1980:378–421, especially p.409) holds that the modern conjugation markers are the reanalysed vestiges of consonants that were the final part of the verb root in the proto-language. For example, the Warlpiri Immediate Future verbs *yanku* 'will go', *ngalku* 'will eat', and *nyinaku* 'will sit' have the synchronic analysis *ya+n+ku*, *nga+l+ku*, and *nyina+ø+ku*. According to the root-final consonant school of thought, these forms continue **yan+ku*, **ngal+ku*, and **nyina+ku*, respectively (verb roots of the class of **nyina-* 'sit' having ended in vowels from the beginning). A feature of this analysis (though not a necessary one) is the assumption that the proto-language had one morphologically invariable ending for each tense category, no matter which verb root it was attached to. Such an analysis requires the postulation of large numbers of often elaborate sound changes to account for numerous tense forms in the modern languages that lack a conjugation marker in some forms of a given paradigm, such as the Warlpiri Past tense form *nga+rnu* 'ate' (which lacks *l*), and for the rather diverse shapes that the marker for a given tense category can take in different verbs in a given language, such as the *+rnu* and *+nyu* Past endings in some languages. Under this analysis one of the questions that remains is the historical stage at which root-final consonants were synchronically present as such: was this stage pPN, or Proto PN-GN (if such a node existed), or Proto Australian, as Dixon (1980) held it to be?

Another approach to the question of the conjugation markers (for example Alpher 1990) is simply to reconstruct from actual TAM forms in the modern languages without making any assumption that there was a stage of the language at which a given conjugation marker was present in every form in a given paradigm. Under this approach, the attestation in modern languages appears to constitute confirming evidence that PN is indeed a genetic subgroup. The reconstructed ancestral system appears to have been less regular than that of a number of the daughter languages, with conjugation markers recurring in fewer of the tense-categories of given verbs. The daughter languages appear to have in certain instances generalised conjugation markers to TAM categories that did not originally have them. It seems also clear that various verb stems in one or another modern PN language have changed their conjugation membership since the time of the proto-language, and that various languages have created new conjugation markers: Yir-Yoront *lh*, for example, does not appear to continue any of the conjugation markers that can be reconstructed for pPN.

1.2 The Gunwinyguan family

It has been suggested for some time now that many of the non-Yolngu languages of Arnhem Land are related to one another as members of a GN family of the Australian language family. Building on established classifications (e.g. O'Grady, Wurm & Hale 1966) we will argue for the addition of the following three languages (classed as isolates in the above-named classification) to 'greater Gunwinyguan': Nunggubuyu (Nu),[4] Warray (W), and Uwinymil (U); the reasons for these additions are given in the rest of this article (verb inflection), as well as in other papers in this volume (see the papers by Harvey on pGN historical phonology and on Western Gunwinyguan).

The status of Mangarrayi (M) is still in dispute. Merlan (this volume) argues for grouping it with the Maran family, on the grounds of shared nominal and demonstrative morphology, but its verbal inflections exhibit such striking resemblances to the GN languages that we believe it should be considered a GN language, and the resemblances to Maran languages attributed to shared inheritance from the Proto Arnhem level. See R. Green (this volume) for a discussion of some features of Proto Arnhem verb-suffixal morphology.

Our view of the interrelations between these groups — which at this early stage of research is still heuristic rather than established — is given in Figure 1, which is based partly on a 100-word lexicostatistical classification (numbers at nodes show the lowest percentage of shared vocabulary between any pair of languages beneath that node) and partly on more qualitative considerations. The '*bak*' and '*marne*' subgroups are named arbitrarily after the forms of the benefactive applicative found in these two groups. The verbal suffix system of Kunbarlang is so aberrant that we decided not to integrate it into our reconstruction at this stage.

The division of GN into western, central and eastern branches, though only heuristic at this stage, will be useful in deciding whether scantily attested forms have a sufficiently broad distribution, across genetic space, to be reconstructed back to pGN. Nunggubuyu, as indicated in Figure 1, appears to have relatively close affinities to the eastern group. Numbers at nodes indicate the minimum percentage of words from the Swadesh 100-word list between any pair of languages below that node of the tree.

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4 Heath (1978a, 1997) has argued that Anindilyakwa (= Enindhilyakwa) is relatively closely related to Nunggubuyu, and in fact that those two languages plus Ngandi form a subgroup; it would follow from this that Anindilyakwa should also be subsumed under the Gunwinyguan family. While not wishing to reject this hypothesis out of hand, we do not feel it has been demonstrated conclusively at this point with any significant body of cognate lexical items or grammatical morphology, and because of the difficulties of the Anindilyakwa data do not discuss it in this article.

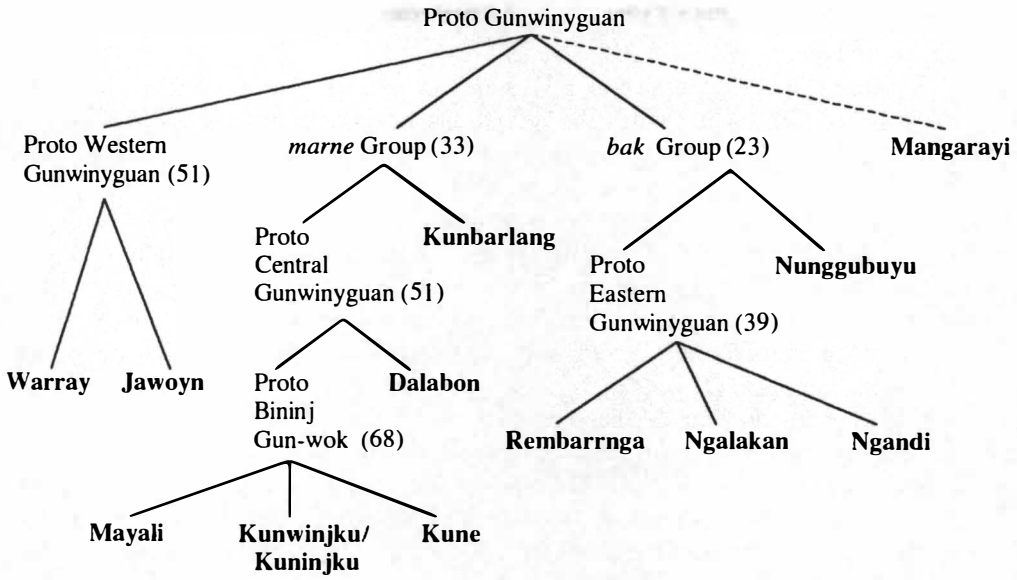

Figure 1: Heuristic division of the GN family

This paper examines the verbal systems of the languages which potentially fall within this putative 'greater Gunwinyguan' group, with a view to reconstructing a proto-verbal system, and establishing if this reconstruction provides any evidence for the existence of a subgroup. The total set of languages on which this reconstruction is based is thus Dalabon (D; Evans & Merlan this volume), Bininj Gun-wok (BGW — comprising Kunwinjku, Mayali and Kune dialects; Evans 2003), Jawoyn (Ja; Merlan to appear), Ngalakgan (Ngal; Merlan 1983), Ngandi (Ngan; Heath 1978b), Rembarrnga (R; McKay 1975), Warray (Harvey 1990) and Nunggubuyu (Heath 1984), plus occasional information from Uwinymil (U; Harvey field notes).

Before commencing our reconstruction we will briefly consider some of the principles underlying our methodologies.

First, we take it as a given that proto-languages, including pGN, varied as currently attested ones do, e.g. in allowing some alternative forms.

Second, we approach the conjugational system from a paradigmatic point of view. As a consequence, in addition to deriving forms through sound changes (see Harvey this volume, Chapter 8, for a discussion of Gunwinyguan historical phonology), we assign a major role to analogy in our morphological reconstruction (cf. Koch 1996).

Thirdly, as discussed in §1.1 above, our reconstructions are word-based rather than morpheme-based: we compare, and reconstruct, inflected words rather than morphemes taken in isolation.

In all of the languages under consideration, except M, verbs have the basic form:

pronominal prefixes + verb stem (+ derivational suffix) + TAM

In addition, the languages under consideration display varying degrees of polysynthesis, with optional adverbial prefixes, incorporated nominals, applicatives, and even incorporated participials between the pronominal prefixes and the verb stem. In all GN languages, up to

two arguments are represented by pronominal prefix. However, we will not consider the morphology preceding the verb stem in this paper.

All GN languages have two types of verb stems, simple and compound. Simple verb stems consist of a verb root to which the inflection for tense and aspect may be added directly. All of the languages have a score or so monosyllabic simple verb roots and it is with these that we will chiefly be concerned. Compound verb stems consist of either a verb or nominal root (here designated the 'prepound'), followed by a 'thematic' which takes the inflections. In all of the languages, at least some of the thematics can function as simple stems (e.g. *pu-* 'hit'), and others may have cognates which are independent monosyllabic verbs in other Australian languages. The Bininj Gun-wok thematic *-wa*, for example, appears only in compound stems (e.g. *wakwa* 'not to know, be ignorant') but is an independent stem in other GN languages such as D, in which *wa* means 'follow' (§3.6). Historically it appears that all of the thematics which can be reconstructed for pGN correspond to an independent monosyllabic verb in at least some GN language.

M has simple and compound verbs of the type described. However the majority of verbal lexemes in M consist of an independent particle with a following auxiliary; in this, as with other features discussed above and in Merlan (1981:xiii, also this volume), its outlier status with respect to GN is evident.

In addition, all GN languages have a number of derivational suffixes, such as the reflexive, reciprocal and inchoative, between the verb stem and the TAM inflections. Normally these, too, found their own particular pattern of TAM inflections; we will reconstruct forms and paradigms for two such V –> V derivational suffixes (the reflexive and reciprocal) and two distinct inchoative suffixes deriving verbs predominantly from adjectives.

1.3 A sample Gunwinyguan paradigm: Bininj Gun-Wok

To give an overview of a typical GN TAM paradigm, consider the partial paradigm from BGW,[5] given in Table 2. Verb thematics are given in bold, and we have included reflexes of all of the GN roots discussed in this paper. Omitted from the paradigm, because the lack of attestation in other GN languages makes comparison impossible, are the conjugation for defective verbs (e.g. *care* 'want') not showing the full range of TAM categories, and the participial form of the verb used when incorporated into another verb. The numbering of conjugations is that used in Evans (2003).

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5 The paradigm given is identical for all dialects (Gun-djeihmi, Kunwinjku, Kunrayek and Kune, running from west to east) except that Kunrayek and Kune have lost the Past Imperfective category, replacing it according to a number of strategies such as reduplication, serialisation with *ni* 'sit', and use of the irrealis form for distant past repeated actions.

Table 2: Conjugation of verbs in Bininj Gun-wok
(The morpheme determining the conjugation is shown in capitals.)

Class		Imperative	Non-Past	Past Perfective	Past Imperf'tive	Irrealis	Reciprocal/ Reflexive
1	**karrME** 'have'	*karrmen*	*karrme*	*karrmeng*	*karrmi*	*karrmeninj*	*karrmerr-*
2	**PAYE** 'bite'	*payemen*	*paye*	*payeng*	*payeyi*	*payemeninj*	
2irr	**TOWE** 'die'	*towemen*	*towen*	*toweng*	*toweni*	*towemeninj*	*towerr-*
3a	**KA** 'take', **NA** 'see', **WO** 'give'	*ka*	*kan*	*kang*	*kani*	*kayi*	*karre-*
3b	**NGU** 'eat'	*ngu*	*ngun*	*nguneng*	*nguni*	*nguyi*	
4a	**caWA** 'ask'	*cawa*	*cawan*	*cawam*	*cawani*	*cawayi*	
4b	**BU** 'hit'	*pu*	*pun*	*pom*	*puni*	*puyi*	*purr-*
5a	**TU** 'growl'	*tu*	*tung*	*tuy*	*tungi*	*tuyi*	*turr-*
5b	**turnTE** 'return'	*turnte*	*turnteng*	*turnti*	*turntengi*	*turnteyi*	*turnterr-*
5c	**MA** 'pick up'	*ma*	*mang*	*me(i)*	*mangi*	*mayi*	*marr-*
6a	**TA** 'stand up'	*tangimen*	*tangen*	*tanginy*	*tany*	*tangemeniny/ tayi*	*tangerr-*
6b	**wayTA** 'be raised'	*waytan*	*wayta*	*wayti*	*waytany*	*waytangemeniny*	
	TI 'stand'	*tin, tangen*	*ti*	*ti*	*ti*	*tiwirriny*	*tirri-*
7	**NI** 'sit'	*nin*	*ni*	*ni*	*ni*	*niwirriny*	
	wokTI 'speak'	*woktin*	*wokti*	*woktany*	*wokti*	*woktiwirriny*	
8	**YU** 'lie'	*yun, yongen*	*yo*	*yonginy*	*yoy*	*yuwirriny*	
9	**RE/WAM** 'go'		*ray*	*re*	*wam*	*rey*	*raywiny/ rayi*
10	**puRRE** 'hit each other, fight'	*purremen*	*purren*	*purriny*	*purreni*	*purremeniny*	
11	**warreMEN** 'go bad'	*warremimen*	*warremen*	*warreminy*	*warremeni*	*warremeniny*	

The following three points are worth noting about the system. In all of them, BGW is typical of GN languages without of course being identical to pGN.

(a) CATEGORY STRUCTURE OF THE TAM INFLECTIONS. The five-way inflectional system can be schematised as shown in Figure 2.

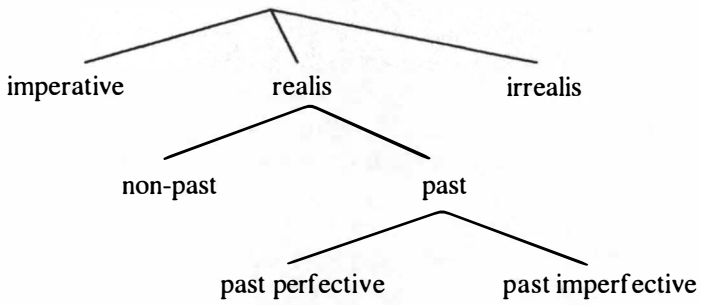

Figure 2: Typical semantic structure of Gunwinyguan TAM inflections

A distinct and cognate imperative form is not found in enough other GN languages to warrant reconstruction.

The irrealis form has cognates in D, Ngan (in the evitative) and Nu (in the non-past 2). Table 3 gives forms for the verbs 'see', 'give' and 'eat' where the cognacy is particularly clear. These suggest that an irrealis series is reconstructable for pGN, but so many languages have lost the distinction, or blurred or exchanged forms between the irrealis and the past imperfective, that the reconstruction is complex and will not be attempted in this paper.

Table 3: Sample verbs illustrating cognacy between the BGW irrealis, D irrealis, Ngan 'evitative' and Nu 'non-past 2'

	BGW (irrealis)	D (irrealis)	Ngan (evitative)	Nu (non-past 2)
'see'	*nayi(ny)*	*ney*	*nayi*	*nayi:*
'give'	*woyi*	*woy*	*woyi*	*uyi:*
'eat'	*nguyi*	*nguy*	*nguyi*	*nguyi:*

The other three categories — the non past, past perfective, and past imperfective — have clear cognates in the bulk of GN languages, and we will reconstruct them for pGN. There is one further category that may be reconstructable for pGN but is absent from BGW: a future/irrealis form; again we omit this for reasons of space.[6]

(b) REFLEXIVE/RECIPROCAL SUFFIX. The reflexive/reciprocal suffix is added to the root of any semantically eligible verb;[7] it then takes its own pattern of TAM marking. Thus *pu-* 'hit' forms the RR *pu-rr(e)-*, which then inflects for TAM categories as in conjugation 10 in the paradigm (e.g. NPST *purren*), whereas the root *pu-* on its own follows conjugation 4b.

The form *-rr(e)-* for reflexive/reciprocals is a BGW/D innovation, and may be a development from earlier *-te*, itself deriving from a widespread detransitivising *-thi* by delaminalisation (see Harvey this volume, Chapter 8). Most GN languages have a similar system, but involving some selection from the two distinct forms forms *-yi* and *-nyci*, both reconstructable to pGN and beyond. We will discuss these in §3.19.

(c) INAPPROPRIATENESS OF 'CONJUGATION MARKER' ANALYSIS. Most importantly for our understanding of how conjugations work, and unlike Dixon's analysis of verbal conjugations, it is not usually possible to split the verbal desinences into 'conjugation markers' and invariant exponents of TAM categories.

Firstly, homophonous endings indicate different TAM categories according to the conjugation: thus *-ng* indicates the past perfective with verbs from conjugations 2 and 3, but the non-past with conjugation 5. Similarly, the desinence *-yi* marks past imperfective with verbs from conjugation 2, but the irrealis with verbs from conjugations 3 to 5, and conversely the sequence *-ni* marks past imperfective with conjugations 2 (irreg) to 4, but the irrealis (in its form *-niny*) in conjugation 1.

Secondly, certain segments that are distinctive to particular conjugations, such as the *-m* found with *pu-* and *-wa-*, are restricted to a single TAM category (in this case, the PP forms

6 Though see Evans and Merlan (this volume) for discussion of its Dalabon descendant (the future), and R. Green (this volume) for arguments that this category may go back to Proto Arnhem.

7 And note that the extension in BGW of the reflexive/reciprocal to collective action by subjects allows it to occur on many intransitives as well.

pom and *-wam*); their restricted distribution makes it impossible for them to be analysed as distinct 'conjugation markers', even though they are associated with particular conjugations.

Although it might be objected that these features of the TAM paradigm of BGW may result from a process of fusion that has obscured an earlier and more agglutinative system in which it was possible to isolate conjugation markers and TAM suffixes, our reconstruction of pGN inflected forms will show this not to be the case. For example, no other TAM category of *pu-* 'hit' except for the past perfective can be plausibly reconstructed with an *-m* suffix in pGN, and at least six different monophonemic exponents of the past perfective can clearly be reconstructed.

Most GN languages have retained systems comparable to BGW in conjugational complexity, and we shall see that a similarly irregular system is reconstructable for pGN. As a result, there have always been a number of rival inflected forms to serve as bases for analogical extension to other parts of the paradigm, and the selection of different roots as candidates for analogical extension has been a major factor in creating differences between GN languages.

One further feature of many GN languages that is only marginally evident in BGW is the presence of stem alternations between a monosyllabic form and a longer 'augmented' form. In BGW this is restricted to two of the stance verbs — the NPST of 'lie' has the two forms *yo* and *yongen*, and the NPST of 'stand' has the two forms *tan* ~ *ti* and *tangen*; the *-ng.en* forms are associated with assuming the stance. The *ng*-augmented forms recur in the PP forms *yonginy* and *tanginy*, and the IRR form *tangemeniny*. In BGW these alternate forms are halfway between separate verb lexemes (with the meaning 'assume stance', e.g. 'lie down', rather than just 'be in stance', e.g. 'be in a lying position') and specialised allomorphs of specific TAM-forms (rather like English *burned* and *burnt*); etymologically it seems plausible to reconstruct aspectual pairs of lexemes that have been partly conflated in BGW. But there are other verbs with comparable stem alternations, but where no evidence for such aspectual pairs exists. (BGW has made certain augmented forms the root, e.g. *towe-* and *paye-* 'bite';[8] D has used the base form). It is important to note this archaic feature because (a) the augment may sometimes be reanalysed as inflectional material; (b) extension of the augmented form accounts for some of the more enigmatic correspondences between GN languages; (c) it often provides evidence of cognacy with languages beyond GN.

2 Proto-forms and categories of **pu* 'to hit'

We now turn to a reconstruction of the forms and related categories of the verb **pu* 'to hit'. Having established a system of categories on the basis of this verb, we will then proceed to reconstruct the forms for these categories of a number of other monosyllabic verbs in pGN. In this and the following expositions we set out the raw data (attestations of the relevant TAM forms) in tabular form. We caption the tables with the reconstructed TAM-form or enter the relevant reconstructions in a row of the table *with no implication intended that all the forms in all the cells are regular reflexes of this reconstructed form*, but rather as a labelling device and a way of presenting the data under consideration in a compactly accessible form.

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8 This verb displays great complexities in its alternations and will not be considered in this article, though it undoubtedly goes back beyond pGN and has cognates across Australia.

2.1 Non-past **pu-n*

A form *pu-n*, with a variety of non-past meanings, is found in a number of GN languages.

Table 4: Data relating to the non-past form *pun* 'hit'

J	*pu-n, punpun*	Non-past
W	*pu-n*	Future
	pun-pu-n	Present
BGW	*pu-n*	Non-past
D	*pu-n*	Unmarked: present, imperative, evitative
Ngal	*pu-n*	Evitative/Imperative
	punu-pu-n	Present
	pu-n-a	Future
	pu-n-i	Potential
R	*pu-n*	Present
	pu-n-a	Future
Ngan	*pu-nung*	Future
M	*pu-n*	Present

It may be observed that this form serves as a stem for other tenses in Ngal and R. We will see that the tendency to use the NPST as a founding form may be reconstructed generally for pGN, with the Non-Past serving as a stem for the Past Imperfective in all GN languages. In some languages the semantics of this category has become generalised — to the future in W, the evitative/imperative in Ngal, and the present in M and R.

The Ngan form *pu-nung* 'hit-FUT' appears to be derived from **pu-n* in this way (i.e. as **pu-n-ung*). The suffixes marking Future tense in Ngan fall into two major classes: those of the form *-C*, and those of the form *-Cu/ang*. For a number of verbs in the first class, the *-C* Future suffix corresponds directly to pGN Non-Past forms: 'chop' (§3.15), 'tell off' (§3.16), 'hear' (§3.4), 'see' (§3.1). This establishes a connection between the pGN Non-Past inflections and Ngan Future suffixal marking. Of the verbs in the second class, in addition to 'hit', there are three other verbs: 'eat' (§3.3), 'do/say' (§3.17), and 'give' (§3.2) where the initial C of the *-Cu/ang* Future suffix corresponds to the pGN Non-Past. This suggests that the Future suffixes of the form *-Cu/ang* were originally analysable as **-C-u/ang*, with an **-u/ang* suffix being added to a Non-Past stem.

2.2 Past realis: perfective **po-m* and imperfective **pu-n-iny*

All of the GN languages have an aspectual contrast between two forms of the verb 'to hit' within the past realis category — basically perfective vs imperfective. These are shown in Tables 5 and 6.

Table 5: Data relating to the Past realis perfective **po-m*

J	*pu-m*	Past punctual (realis and irrealis)
W	*pu-m*	Past realis perfective and 1st Subj Non-Past
BGW	*po-m*	Past realis perfective
D	*po-ng*	Past perfective
Ngal	*poq-po-Ø*	Past realis punctual
R	*puwa*	Factual past punctiliar
Ngan	*poo-m*	Past realis punctual
Nu	*pa-ng*/$C_{[\text{-cont}]}$— *wa-ng*/elsewhere	Past realis punctual
M	*pu-p*	Past realis punctual

Table 6: Data relating to the Past realis imperfective **pu-n-iny*

J	*pu-nay*	Past continuous (realis and irrealis)
W	*pu-n-iny*	Past realis imperfective
BGW	*pu-ni*	Past realis imperfective
D	*pu-niny*	Past imperfective
Ngal	*pu-n-iny*	Past realis continuous
R	*pu-n-iny*	Factual past continuous
Ngan	*pu-ni*	Past realis continuous
Nu	*pi-ni*/$C_{[\text{-cont}]}$— *wi-ni*/elsewhere	Past realis continuous, and other past categories, except past realis punctual
M	*pu-ni*	Past realis continuous

Although all GN languages have some sort of aspectual contrast, the exact nature of the distinction varies from language to language:

JAWOYN Where a clear contrast between Punctual and Continuous can be found ... Punctual is probably best defined as 'completed' in the past, and Continuous as 'ongoing', or realised over a time span, in the past. The latter includes notions of customary, traditional or habitual action. (Merlan n.d.)

MANGARRAYI Past continuous is the category used when punctuality (perfection at a specific moment in past time) is not explicitly expressed; elsewhere, the past continuous positively expresses continuity of the verbal meaning in past time, particularly imperfectivity at a moment identified as reference point of narrated past events. In contrast to the past continuous, past punctual is used to denote a single perfected action, not continuous in the past. (Merlan 1981:148–149)

BININJ GUN-WOK Most typically this [the Past Perfective] is used to refer to a single, completed past action.

The past imperfective is used for a variety of past actions that are uncompleted, neutralised, repeated, drawn out or backgrounded. ... Habitual, repeated past actions or past

states are typically but not necessarily accompanied by appropriate time adverbials with meanings like 'before, in ancient times, in the olden days'. The past imperfective extends to purpose complements of habitual verbs (Evans 2003).

NUNGGUBUYU Punctual is used for events which either occurred suddenly ('He died', 'He hit her'), or are represented as processes which took place over a relatively brief time span. Continuous applies to prolonged or repeated events/situations (Heath 1984:340).

NGALAKGAN In narrative the past continuous is used to represent the framework of events within which other events (continuous or punctual) occur (Merlan 1983:104).

NGANDI Several of the early texts in particular deal with formerly habitual activities (rather than specific events) and thus show many examples of the PCon. ... Clearly, PPun is typical for isolable events, PCon for prolonged activities or states (Heath 1978b:104–105).

While there are variations in the markedness relationship between the two forms, there are certain constants. In all languages for which reasonable detail is available one category typically describes past punctual events, while the other category typically describes past habitual events/situations, and sets situations.

The verb forms marking the Past Imperfective appear to be related. The only unclear case is the J form *pu-nay*; the likely analogic origins of the *-ay* imperfective are discussed in §3.13. The forms in the other languages are *pu-n(-)iny* [D, Ngal, R, W], *pu-ni* [M, BGW, Ngan, Wagiman], and *pi-ni* ~ *wi-ni* [Nu]. The root consonant is obviously to be reconstructed as **p*. The *w*-initial forms in Nu reflect the widespread operation of lenition in Nu (Heath 1978a:37–41). The root vowel is to be reconstructed as **u*. The *i* which occurs in Nu appears to reflect the operation of sporadic vowel harmony.

There are four languages where the Past Imperfective has a final *ny* [D, Ngal, R, W], and four where it does not [M, BGW, Ngan, Nu]. This is not a regular correspondence between these two sets of languages. However, there are phonetic motivations for irregular correspondences between forms with word-final *i* and forms with word-final *iny*. These phonetic motivations arise from the interaction between the distribution of the tense and lax allophones of *i*, and the distribution of release types for stops and nasals.

The distribution of tense and lax allophones varies somewhat from language to language. However, *i* is normally lax (open and slightly centred) in closed syllables, unless the syllable is closed by a palatal, in which case it is tense (close). It is also tense in word-final position. Stops and nasals are commonly unreleased in word-final position, and often the principal auditory cue to their presence is the fact that the final vowel is lax. However, there is no such cue with *i*, if the word-final consonant is palatal. Word-final palatal stops may be distinguishable by a relatively abrupt cessation of voicing, but even this cue is unavailable with nasals. Distinguishing *i#* and *iny#* from each other is thus comparatively difficult, and irregular correspondences between the two are to be expected. Another sporadic example of this correspondence (numbered as in Harvey this volume, Chapter 8) is **karri(ny)* (Harvey's Appendix 260).

In the case for the Past Imperfective, weight of numbers would slightly favour epenthesis, as there are four languages with *ny* and six without. However, additional evidence for the existence of an old -iN canonical shape comes from occasional cognate forms in other GN outliers with final nasals in the PI, though these are often velar rather than palatal. Consider

Uwinymil: though the Uwinymil PI form of 'hit' is not recorded, the PI form of 'give' is *woning* (§3.2). Likewise, in W, the verb 'to drink' has a final *-ang* in the PI:[9]

Table 7: TAM paradigm of the verb 'to drink' in Warray

Future	*pi-rl*
Present	*pirl-pi-rl*
Past Imperfective	*pirl-pi-rl-ang*
Past Perfective	*pi-ng*

These sporadic *ng*-final forms raise the question of whether we should not reconstruct an original *-ing* ending for the PI in pGN, since a development of **ing* > *iny* is much more likely than the reverse. Although this would be phonetically plausible, we resist doing so here because the attestation of final velar nasals is limited to these two cases. However, we leave open the possibility that our reconstruction will need to be modified in this regard once further data come in from other reconstructed families.

We reconstruct the PP of 'hit' (Table 4) as having two alternants **po-m*, with the ending **m* continued regularly as /m/ in J, W, and BGW and as /p/ in M (word-final nasals denasalise to stops (Harvey this volume, Chapter 8, §4.4), and the ending **ng* continued unchanged in D and Nu. Ngal and R show a zero suffix here which is not a regular development from **m*; here as in other paradigms (see below) Ngal and R have developed separately and in parallel with each other. The initial /p/ in all the forms in Table 4 continues regularly from pGN **p*; in Nu **p* regularly develops to /p/ after an obstruent and to /w/ elsewhere. The regular stressed-vowel correspondences for the languages are J /o/, W /o/, BGW /o/, D /o/, Ngal /o/, R /uwa/ (by vowel breaking), Ngan /oo/ (in monosyllables) Nu /a/ (Heath 1978a:44–45), and M /o/, reconstructed as **o*, and J /u/, W /u/, BGW /u/, D /u/, Ngal /u/, R /u/, Ngan /u/, Nu /u/, and M /u/, reconstructed as **u*. Because Nu /a/ can attest only **o* and not **u*, we reconstruct **pom* ~ **pong* for the PP with **o*. We take the /u/ forms in J, W, R, and M to originate analogically on the basis of the corresponding PI forms (Table 5), which uniformly attest **u*.

2.3 The pGN conjugation of **pu* 'to hit'

The preceding reconstruction has established a verb root **pu* 'to hit'. This verb root had the following inflected forms in the following categories.

Table 8: Inflected forms of pGN **pu* 'to hit'

**po-m ~ * po-ng*	Past Realis Perfective
**pu-n-iny*	Past Realis Imperfective
**pu-n*	Non-Past

9 This verb is one of a number of monosyllabic verbs in Warray, where the stem for the Past Imperfective is a reduplicated rather than a simplex Non-Past form. This structure is evidently old in Warray, as many of these reduplicated imperfectives show irregularities. The 'drink' verb is the only verb to show a dorsal, instead of a palatal, nasal in the Past Imperfective (the /a/ vowel in this allomorph is regular).

Having established these categories for **pu* 'to hit' we will now proceed to reconstruct the forms for these categories for other verbs. Before doing so, however, we shall say something about the roles of analogy and system in reshaping verb paradigms.

2.4 System and analogy in the Gunwinyguan verbal paradigm

Although it is convenient, for expository purposes, to treat individual verbs in isolation, and to further isolate individual TAM categories within particular verbs, this has the unfortunate effect of backgrounding morphological similarities within and across conjugations, and hence of obscuring one of the main sources of morphological change. At several points in this paper we shall appeal to analogical reshaping, and it is therefore appropriate to outline in advance some of the main places where analogical changes tend to occur, since this gives the opportunity to view the impact on relevant categories of an overall system something like the BGW system discussed in §1.3 above.

Firstly, some TAM categories are more likely than others to serve as analogic bases. The single most common trend is for the non-past form to supplant the root as the base to which other suffixes are added. A second tendency, which we will not discuss further here since we are not reconstructing the irrealis form, is for there to be mutual influence between the past imperfective and irrealis forms; this may continue an old pattern of formal relatedness between these two categories.[10]

Secondly, not all conjugations are equally likely to serve as analogic bases: conjugations whose PP ends in *-m* or *-y* do not serve as analogic sources in any GN language — see Table 39 in §4.

Thirdly, certain verbs tend to cluster together on semantic grounds, and particular changes may be quarantined within these classes. The stance verbs 'sit', 'lie' and 'stand' are again and again the subject of analogical forces tending to produce language-specific innovations across the three members of the set: for example, all three develop peculiar IRR forms in BGW, and special left-reduplicated imperfective forms in W, all three shift PI forms into the PP in Ngal and M, and all three recruit an old augmented base as the NPST form in R. See Alpher (2000) with regard to changes limited to the stance verbs in PN.

Finally, we must note a logical caveat in our method: it cannot be guaranteed that the TAM system of the verb 'hit' will be identical to that with all other verbs; verbs in other semantic classes may lack or skew the aspectual distinction in the past. We shall see examples of aspectual flip-flops in the stance verbs of some GN languages.

3 Other pGN monosyllabic verb roots

We now extend our analysis to a number of other verbs. Where our discussion of *pu-* revealed the lack of a given category in a particular language, or where a verb is not attested

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10 Merlan (1981) discusses the system of verb augments in Mangarrayi in this light, pointing out that both the past negative (continuing the irrealis) and the habitual (continuing the past imperfective) have the same augments, and suggesting (1981:153) that '[i]n earlier stages the augment appears to have been part of a continuous aspect system opposed to a non-continuous (punctual) one, the historical antecedents of past negative and habitual having belonged to the former system'.

in a particular language, we simply leave a gap without comment; where a category exists but is not attested for an otherwise attested verb we write '–'.

3.1 **na* 'to see'

Table 9 gives the forms of 'see' in all relevant languages in which it occurs.

Table 9: Forms relevant to the reconstruction of pGN **na-* 'see'

pGN	Past Perfective **na-y ~ *na-ng*	Past Imperfective **na-n-iny*	Non-past **na-n*
J	*rna-y*	*rna-nay*	*rna-n*
W	*rna-y*	*rna-n-iny*	*rna-n*
BGW	*na-ng*	*na-ni*	*na-n*
D	*na-ng*	*na-niny*	*na-n*
Ngal	*rnaq-na-Ø*	*rna-niny*	*rna-n*
R	*na-Ø*	*na-niny*	*na-n*
Ngan	*rna-y*	*rna-ni*	*rna-n* (Fut)
Nu	*na-ny*	*na-ni*	

Only the PP requires comment in this paradigm, as the other two forms follow from the discussion of **pu*, namely PI **na-n-iny* and NPST **na-n*. As with **pu*, the major division in the PP is the opposition of Ngal and R vs the other languages. The Ngal and R PP forms descend from a null-suffixed proto-form. The other languages all have non-zero PP forms: *-y* (J, Ngan, W), *-ng* (D, BGW), *-ny* (Nu). Since *-ny* is by far the most common PP inflection in Nu (Heath 1984:408–411), its presence here is likely to be an analogical intrusion.

The status of the D and BGW *-ng* forms is problematic. If only GN data are considered, the most probable explanation would be that D and BGW have analogically extended the *-ng* inflection, which is a common PP inflection in both these languages. However, outside GN there is the Kamu form *ne-ng* 'see-PP' to consider (Harvey this volume, Chapter 6). This form cannot be explained as reflecting the spread of *-ng* as a PP inflection there, since *-ng* is not a predominant PP inflection in Kamu (Harvey this volume, Chapter 6, Table 1). We may also note that Kamu has a *-y* PP inflection in *ma-y* 'get-PP' (§3.13). The Kamu evidence of a non-GN cognate form in *-ng* suggests that two variants should be reconstructed for the PP of this verb.

3.2 **wo-* 'to give'

The forms of **wo-* 'give' are shown in Table 10.

Table 10: Data relating to the reconstruction of forms of **wo-* give

pGN	Past Perfective **wo-y ~ ?*wo-ng*	Past Imperfective **wo-n-iny*	Non-past **wo-n*
J	*wo-y*	*wo-nay*	*wo-n*
W	*wo-y*	*wu-n-iny*	*wu-n*
BGW	*wo-ng*	*wo-ni*	*wo-n*
D	*wo-ng*	*wo-n-iny*	*wo-n*
Ngal	*woq-wo*	*wu-niny*	*wu-n*
Ngan	*wo-y*	*wo-ni*	*wo-nung* (Fut)
Nu	*ya-ny* (Ind); *-a-ny* (Aux)	*i-ni* (Ind); *-u-ni* (Aux)	
M	*wu-na*	*wu-ni*	*wu-n*

The weight of evidence favours the reconstruction of **o* as the root vowel in all three TAM values, and attributing the occasional appearance of **u* to various innovations.

In M, mid vowels appear only in forms belonging to the open lexical classes (Merlan 1981:181), which do not include directly inflecting verb roots. Even in the open lexical classes, there are a number of cases where a high vowel in a M form corresponds to a mid vowel in a number of other languages (Harvey this volume, Chapter 8). Consequently, the *u* vowel in the M forms may be analysed as having replaced an original **o* vowel, as a result of the restrictions on mid vowels in closed classes.

The *u* vowel in the W PI and NPST forms may be attributed to vowel raising, a process which is extensively attested across the lexicon in W (Harvey this volume, Chapter 8). The *u* vowel found in the Ngal PI and PRES forms is irregular. However, with regard to these forms and to other forms with *u*, the comparative likelihood of **wo* > *wu* vs **wu* > *wo* must be considered. While a change **wo* > *wu* is a standard assimilatory development, the converse **wu* > *wo* lacks any obvious motivation. As such, the most probable explanation for the Ngal *u* forms is that they result from an irregular assimilation.

The Ngal PP shows the standard pattern of having a reduplicated reflex of an original *-Ø* suffixed form. The J, Ngan, and W forms all directly reflect **-y*. The Nu PP suffix *-ny* shows the same analogical extension of *-ny* found with **na* 'to see' (§3.1). The Nu forms do however present further problems. According to Heath (1978a:40) loss of **w* is a fairly regular process, and as already mentioned *a* is the regular reflex of **o* in Nu, though occasionally **o* –> *u* occurs (Heath 1978a:44). These changes would explain the Nu auxiliary forms. The *i* root vowel in the independent PI form reflects the operation of vowel harmony from the suffix, as with the Nu reflex of **pu-n-iny* 'hit-PI' (§2.2). However the *y* which appears initially in the independent PP form is not presently explicable.

The situation with D and BGW PP suffix *-ng* is similar to that with the verb **na* 'to see'. The only difference is that there are no forms in other languages which would support the reconstruction of a **wo-ng* variant (Kamu does not have a 'give' verb). We therefore assume that *wo-ng* arose, as a shared innovation of BGW and D, by analogical extension from other verbs with PP *-ng*, including **na-ng*, **po-ng* and **ka-ng*. The PP suffix *-na* in M cannot be related to the PP suffixes in the other languages.

3.3 **ngu-* 'to eat, consume'

The verb **ngu-* (Table 11) is unattested in the eastern languages (W and J), and in M, though it has some nonGN cognates (e.g. Wardaman *ngu-n* 'eat-PRES' — Merlan 1994).

Table 11: Data relating to the reconstruction of inflected forms of **ngu-* 'eat'

pGN	Past Perfective **ngong*	Past Imperfective **ngu-n-iny*	Non-past **ngu-n*
BGW	*ngu-neng*	*ngu-ni*	*ngu-n*
D	*ngu-ny*	*ngu-niny*	*ngu-n*
Ngal	*ngo-winy*	*ngu-niny*	*ngu-n*
R	*ngu-ny*	*ngu-niny*	*ngu-n*
Ngan	*ngo-ng*	*ngu-ni*	*ngu-nung* (Fut)
Nu	*nga-ng*	*ngu-ni*	

The PP, as with other verbs, is the problematic form. The BGW form appears to be an innovation based on extending the PP ending *-eng*, common in BGW (found throughout conjugations 2 and 3, though the vowel there originates from the thematic rather than the suffix) and adding it to a NPST base. The Ngal form, with its augment *.wi.* which is shared only with the verb 'cry' (see §3.7 below), is not found elsewhere in GN; if an innovation, it is an unmotivated one, so it may be an archaism. Both the *ngVny* and *ngVng* forms occur in adjacent pairs of languages, so one cannot use arguments about the distribution through the family to justify a preference for one of these forms. Finally, the *o* vocalism is attested in Ngal, Ngan, and Nu (via regular *o* > *a*) and we therefore attribute it to the proto-language, with analogic levelling to *u* in the remaining conjugations on the basis of the NPST and PI forms. The *nguny* form in R and D, which are adjacent and share some areal innovations, is likely to be an analogic intrusion from other verbs, such as *ru-* 'cry', whose PP in pGN is clearly reconstructable as **runy*.

The other TAM categories are straightforward, with the reconstructed forms surviving into a number of modern languages and the other changes being familiar ones.

3.4 **nga-* 'to hear'

The verb **nga-* (Table 12) is represented in fewer languages, though it is attested in both W and E branches.

Table 12: Data relating to the reconstruction of inflected forms of **nga-* 'hear'

pGN	Past Perfective **nga-m ~ nga-ng*	Past Imperfective **nga-n-iny*	Non-past **nga-n*
J	*nga-nay*	*nga-nay*	*nga-n*
W	*nga-m*	*nga-n-iny*	*nga-n*
R	*ngawa-Ø*	*ngawa-niny*	*ngawa-n* (Pres)
Ngan	*nga-ng*	*nga-ni*	*nga-n* (Fut)
Nu	*yanga-ng*	*yanga-ni*	

According to Heath (1984:636) the Nu verb *yanga* is a fused compound of **yang* 'language' and **nga* 'to hear'. (A D parallel to this is the incorporation of *yang* 'language, speech' into the verb *wonan* 'hear', giving *yang-wonan* 'hear talk, hear (someone's) words or story'.) The R paradigm reflects vowel breaking (Harvey this volume, Chapter 8), though the *-ŋ* ending in the PP is problematic and unexplained.

The original form of the substantive PP suffix, found in the other languages, is uncertain, and as with 'hit' reveals competing *ng-* and *m*-final forms. In J, the PI has replaced whatever form was originally the PP form. It appears that J has extended the PI form to cover the PP as well.

3.5 **ra-* 'to spear'

Though **ra* is attested in only three languages (Table 13), the great distance between Nu, on the one hand, and U and W, on the other, supports its reconstruction for pGN.

Table 13: Data relating to the reconstruction of forms of **ra-* 'spear'

	Past Perfective	Past Imperfective	Non-past
pGN	**ra-m*	**re-n-iny*	**re-n*
Nu	*ra-ng*	*ra-ni*	
Uwinymil	*ra-m*	*ye-ning*	*ye-n*
W	*la-m*	*le-n-iny*	*le-n*

Further support for the antiquity of this verb comes from cognates in the Eastern Daly languages (Table 14).

Table 14: Cognates of pGN **ra-* 'spear' in the Eastern Daly languages

	Past Perfective	Past Imperfective	Non-past
Kamu	*rda-m*		
Matngele			*rde-n-ek*

Harvey (this volume, Chapter 6) examines the relationship of the two forms in the Eastern Daly languages, Kamu and Matngele, to those found in the GN languages. For the purposes of this paper, two points need to be noted. One is that the Eastern Daly forms support the reconstruction of a difference in stem vocalism between the PP on the one hand, and the PI and NPST on the other. The distribution of this difference in root vocalism is the same as that found with **pu* 'hit' (§2).

The other point is that Kamu supports the reconstruction of **-m* as the PP suffix. In this connection, the Ngan compound verb *ram-dha* 'to spear' should also be considered. This may historically have taken the PP form of the old monosyllabic 'spear' verb as the base for the compound. The Nu suffix *-ng* appears to be an analogical intrusion based on the 'hear' and 'hit' forms.

3.6 **wa-* 'to follow'

Reflexes of **wa-* (Table 15) mean 'follow' in D, M, Ngal and R; in BGW **wa-* continues only as a thematic (and as a suppletive PP of 'go'; other TAM values of 'go' have a root √*re*). In D, the PP form varies, depending on whether the verb is an independent form *wawi-ny* or a thematic *-wa-ny*. The irregular free form is common to D and R. In J and W, it occurs only as a thematic. In languages in which it appears only as a thematic, its shape is *-wa*.

The PP form is reconstructable as **wa-m*, as this is the form attested in all the languages save D, Ngal, and R (besides the regularly denasalised M form *wa-p*). The D and R independent form *wawi-ny* is irregular, and its source is somewhat uncertain. This form is a semiregular development by vowel breaking in R from a monosyllabic form **wa-ny*. If this was the course of development, then the D form has been borrowed from R, as vowel breaking is not otherwise attested in D.

The *-ny* suffix found in D and R does not correspond with the *-m* suffix found in the other languages. The most likely source for the *-ny* suffix is analogic influence, as *-ny* is the dominant PP form in D and in R (McKay 1975:132). In Ngal the PI form has replaced the PP form.

Table 15: Data relating to the reconstruction of **wa-* 'follow'

	Past Perfective	Past Imperfective	Non-past
pGN	**wa-m*	**wa-n-iny*	**wa-n*
J	*-wa-m*	*-wa-nay*	*-wa-n*
W	*-wa-m*	*-wa-n-iny*	*-wa-n*
BGW	*-wa-m; wam* 'go:PP'	*-wa-ni*	*-wa-n*
D	*-wa-ny; wawi-ny*	*wa-niny*	*-wa-n*
Ngal	*wa-niny*	*wa-niny*	*wa-n*
R	*wawi-ny*	*wa-niny*	*wa-n*
M	*wa-p*	*wa-ni*	*wa-n*

3.7 **ru-* 'to cry'

Another verb with a more restricted distribution is **ru-* (Table 16). Although it occurs in a contiguous bloc of languages only, there are enough cognates outside GN to attest its antiquity.

Table 16: Data relating to the reconstruction of pGN **ru-* 'cry'

	Past Perfective	Past Imperfective	Non-past
pGN	**ru-ny*	**ru-n-iny*	**ru-n*
D	*ru-ny*	*ru-niny*	*ru-n*
Ngal	*ro-winy*	*ru-niny*	*ru-n*
R	*ru-ny*	*ru-niny*	*ru-n*
M	*rtu-ni*	*rtu-ni*	*rtu-n*

The initial consonant of the root can be reconstructed as **r*. M does not synchronically permit morpheme-initial *r* (Merlan 1981:186), and the initial *rt* in M can be inferred to have

replaced **r* to satisfy this requirement. The forms of the NPST and the PI do not present any problems. The PP is reconstructed as **runy* on the basis of the D and R forms; in M, the PI has extended its range to displace whatever the original PP form was.

3.8 **tho- ~ *thowi-* 'to die'

Initial **th* is reconstructed in **tho(wi)* on the basis of the correspondence of D and BGW *t* to *c* in other languages; see Harvey (this volume, Chapter 8) for details. This verb is unusual in having a reconstructable disyllabic alternant. Although within GN the disyllabic form is restricted to BGW and J, and on the basis of Guwinyguan evidence alone is not obviously archaic, once one looks to two other Arnhem Land families, Iwaidjan and Maningrida, the case for reconstructing a disyllable becomes persuasive. In both these families it has a disyllabic stem *thuwa* for all (Maningrida) or some (Iwaidjan) TAM values, suggesting that the disyllabic root *towe* in BGW is original rather than augmented. Examples of forms from outside GN are the Marrgu (Iwaidjan) past forms *thuwa* and *thun* (note the alternation between disyllabic and monosyllabic stem) the Ndjébbana (Maningrida) forms *ccúwa* (future, contemporaneous), *yawéla* (remote) and *cawéla* (infinitive), and the Burarra (Maningrida) past form *cuwuna*.

The forms in the GN languages are given in Table 17. Note that W has raised *o* to *u*, a regular development in that language (see Harvey this volume, Chapter 8).

Table 17: Data relating to the reconstruction of pGN **tho(wi)-* 'die'

pGN	Past Perfective **thowi-ng*	Past Imperfective **tho-n-iny, *thowi-niny*	Non-past **tho-n, *thowi-n*
W	*cu-m*	*cu-n-iny*	*cu-n*
J	*coyi-ny*	*coyi-nay*	*coyi-n ~ coyi-ndi-n*
D	*to-ny*	*to-niny*	*to-n*
BGW	*towe-ng*	*towe-ni*	*towe-n*

Both W and D have eliminated the disyllabic forms; D retains the original *o* vowel attested in both J and BGW, whereas W has raised the *o* to *u* and in the process innovated a PP form with *m* by analogy with other verbs like *pum* and *ram*. The imperfective form agrees in W and D, vocalism aside; the NPST presents a similar situation. In both cases there is no compelling evidence for preferring a monosyllabic over a disyllabic stem in the reconstruction, and at this stage we give both as candidates. For the disyllabic stems we reconstruct **owi*, from which the J form can be derived by glide assimilation (to palatal preceding the *i*) and the BGW form by vowel lowering.

3.9 **ka-* 'to take, carry'

The verb **ka-* (Table 18) continues in BGW, R, and W in the meaning 'to take'. In Ngal, M, and Kunbarlang it continues with the additional sense 'to carry', and in Ngan it continues as 'to carry' rather than 'to take'. In J it continues as 'to go'; the semantic connection is obscure but the inflected forms clearly match.

Table 18: Data relating to the reconstruction of pGN **ka-* 'carry'

pGN	Past Perfective **ka-ng, *ka-nginy*	Past Imperfective **ka-n-iny*	Non-past **ka-n*
J	*ka-ngany, ka-ngay*	*ka-nay*	*ka-n*
W	*ka-ngi*	*ka-n-iny*	*ka-n*
BGW	*ka-ng*	*ka-ni*	*ka-n*
D	*ka-ng*	*ka-niny*	*ka-n*
Ngal	*ka-nginy*	*ka-n-iny*	*ka-n*
R	*ka-nginy*	*ka-n-iny*	*ka-n*
Ngan	*ka-ng*	*kanq-ka-nti*	*ka-n* (Fut)
M	*ka-nginy*	*ka-ni*	*ka-n*

The forms of this verb in Ngan, apart from the future *kan* (cognate with the nonpast in other languages), appear generally unrelated to those elsewhere and it seems that in Ngan this verb has been remodelled as a member of the 5th conjugation (Heath 1978b:96).

In BGW this verb inflects on the same pattern as **na* 'to see' and **wo* 'to give', resulting in an innovated PP form *ka-ng*; PP *ka-ng* is also found in D.

However the PP forms in the other languages appear to derive from a proto-form **ka-nginy*, preserved exactly in R, Ngal and M. J shows harmonisation of the affix vowel to the root vowel. The J *ka-ngay* variant shows an irregular loss of the final nasal segment, as does the W form *ka-ngi*.

3.10 **yo- ~ *yu-* 'to lie'

The root **yo- ~ *yu-* (Table 19) continues in all GN languages, though in J it has been fused with **puru* 'sleep' to give the compound form *purru(yu)* 'to lie'.

Table 19: Data relating to the reconstruction of pGN **yo- ~ *yu-* 'lie'

pGN	Past Perfective **yong-iny, * yo-ny*	Past Imperfective **yo-y*	Non-past **yu, *yong-en*
W	*yung*	*yuyiny*	*yu*
J	*purryonginy*	*purroy*	*purruyu*
BGW	*yonginy*	*yoy*	*yo, yongen*
D	*yonginy*	*yo*	*yu*
R	*yuwa*	*yinganiny*	*yangan; yuru*
Ngal	*yony*	*yongoniny*	*yongon*
Ngan	*yonginy*	*yoy*	*yurta*
Nu	*yingany*	*yay*	
M	*yuc*	*yunyi*	*yu*

The reconstructed PP form **yonginy* descends unchanged to at least one western, one central, and one eastern language, as does the PI form **yoy* (counting Ja *purroy* here). There have been a number of changes to the past forms, ranging through vowel assimilations, truncations in W, the D PI and the R PP (followed by regular vowel breaking of *o* to *uwa*).

Ngal and M seem to have used the roots *yo-* and *yu-* respectively as a new founding base for the PP suffix *-ny*; in M the *yuny* that results has gone on to become *yuc* by regular final denasalisation.

The two NPST and PP forms may have conveyed a contrast of the type discussed for BGW in §1.3, of the type 'be lying' vs 'lie down', with the *-ng-* augment associated with the second meaning. The R form *yuru* includes a distinctive sequence *urV* shared with the other stance verbs; this will be discussed further under 'stand' below; the same goes for Ngan *yurta*.

No NPST form can be reconstructed with certainty. The best candidate would appear to be the bare stem **yu* found in W, Ja, D, and M. As with the PI forms, the other NPST forms in the various languages appear to be largely independent.

3.11 *tha- *'to stand up'*, *thi *'to be standing'*

Initial **th* is reconstructed in **tha-* and **thi-* on the basis of the correspondence of Ng *th* : Nu *lh* : D, BGW, R *t*: other languages *c* (Harvey this volume, Chapter 8). The forms are given in Table 20a.

The presence in R and BGW of two forms, one with *a* vocalism and one with *i*, as well as slightly different paradigms, suggests there were in fact two verbs in pGN, whose paradigms have been merged in some daughter languages (e.g. W, Ja, and D) while others have generalised one verb or the other as their free 'stand' verb (*thi* in Ngan and *tha* in Nu, M, and Ngal). In addition, in Ngan, Ngal and Nu there are distinct free and bound forms with different paradigms.[11] Table 20b pulls out the forms from the five languages with two series.

Table 20a: Data relating to the reconstruction of pGN **tha-* and **thi-* 'stand'

pGN	Past Perfective **thanginy* **thi*	Past Imperfective **thany ~ *thiyi* **thangi*	Non-past **thangen* **tha*
W[a]	*cang*	*ciciny*	*ci*
Ja	*canginy*	*ciyay*	*ciyi*
BGW[b]	*tanginy,* *-tanginy,* *ti*	*tany,* *-tany,* *ti*	*tangen,* *-ta,* *ti*
D	*tanginy*	*tiny*	*ti*
R	*taya, tiyi*	*tinganiny, (tanginy)*[c]*, tany*	*ta, tangan, turu*
Ngal	*cany* *-ce*	*canganiny* *-cinginy*	*cangan* *-ca*
Ngan[d]	*thinginy* *-thi*	*thi* *-thangi*	*thurta* (Pres)
Nu	*lhangany* *(-thangi*	*lhay* *-thiny*	*-dhang)*
M	*cac*	*caykini*	*caykin*

[a] thematic only; the verb 'to stand' is *kulu-c-ang*.

[b] three rows represent, respectively, the paradigm for *tangen* 'stand up', *-ta* 'verb formative', e.g. *waytan* 'be raised', and for *ti* 'stand, be standing'. See Table 2 for further details.

[11] On the Nu *-dha* auxiliary, see Heath (1984:408, 417).

[c] only in one dialect; other dialect lacks distinct PI form (McKay 1975:134).

[d] We are grateful to Brett Baker (email, 27/7/01) for supplying the extra Ngandi forms. The first set can function as a stative verb or an intransitive thematic; the second functions as a causativising thematic.

Table 20b: Languages with reflexes of both pGN 'stand' verbs

pGN	Past Perfective **thanginy* **thiyi*	Past Imperfective **thiny~ *thiyi* **thany*	Non-past **thangen* **tha*
BGW.1	*tanginy*	*tany*	*tangen*
BGW.2	*-tanginy* *ti*	*-tany* *ti*	*-ta* *ti*
R1	*taya*	*tanginy* *tinganiny*	*tangan* *ta*
R2	*tiyi*	*tany*	*turu*
Ngal (free)	*cany*	*canganiny*	*cangan*
Ngal (bound)	*-ce*	*-cinginy*	*-ca*
Ngan (stative; free/bound)	*thinginy*	*thi*	*thurta*
Ngan (bound)	*-thi*	*-thangi*	*-thang*
Nu (free)	*lhangany*	*lhay~ lhi*	*lhara*
Nu (bound)	*-thangi*	*-thiny*	*-thang*

The nature of the semantic opposition between the two is problematic: in R the distinction is between 'stand (CAUS), wear' and 'stand', while for BGW the distinction (in main verbs) is between *ta* 'stand up, adopt standing position, come to a halt' vs *ti* 'stand, be in a standing position'. This suggests a contrast between **thi-* 'stand (state)' and **tha-* 'stand (change of state)', with a causal sense developing, at least in R, with the change-of-state verb. In Ngan and Nu the bound form has a causative sense; the stative form in Ngan can be free or bound. Clearly the exact opposition to be reconstructed is problematic: the verb represented by PP **thanginy* descends variously with the meanings 'stand (change of state)', 'cause to stand', and 'cause (bound thematic)', while the verb represented by PP **thiyi* descends with the meanings 'stand, be standing' and 'be, become (bound thematic)'. As shorthand we will refer to them as the 'dynamic' and 'stative' stand verbs respectively.

We now turn back to the fuller set of forms in Table 20a and use these to consider the forms in the modern languages and pG.

M has developed a new stem *cayki-* for all categories but the PP and the IMP.

Most PP forms of the **tha-* root reflect *thanginy* straightforwardly, some with vowel assimilations; the parallel with the 'lie' and 'sit' PP forms is clear. The **thi-* root does not continue in the PP category in many of the daughter languages, presumably because the PP has a clear affinity with the change-of-state form and the *tha-* form would thus have been more likely to survive in a merger between the two verbs; as a result there is no attestation in the western languages. However, the BGW, R and Ngan forms suggest an original form **thiyi*.

The PI dynamic form **thany* continues in BGW, Nu, and R. It appears that the Ngal PP form *cany* is a reflex of the PI form, with a new PI form having been created on the base of

the NPST + *-iny*, as with **yu* 'to lie'. The R stance verb has also innovated a new PI form by the same method, alongside the regularly descended PI form *tany*. M has reanalysed the PI form **thany* as a PP, with the form becoming *cac* by regular sound changes to the initial and final.

The PI stative form is reconstructed as **thiny* on the basis of the forms in D and (with left-reduplication) in W; the BGW form exhibits the same loss of *-ny* after *i* found with other PI forms. The Nu dynamic PI form *-thiny* corresponds formally to this, but with the opposite semantic value.

We reconstruct **thangen* as a NPST change-of-state form on the basis of attestation in the central and eastern branches (BGW — a central language — and two eastern languages, namely R and Ngan), and **thi* as a NPST stance verb from attestation in the central (BGW) and western (W, Ja) branches. However, the great variety of forms here weakens the certainty of this reconstruction.

Finally, the presence of cognates of R *-turu* outside GN makes it possible that this form is the sole survivor of a pGN form **-thuru*. Presented with Maningrida-family forms like the Ndjébbana 'contemporary series' *yora* and *nora* (there is no comparable 'stand' form) or Burarra *cirra* 'stand', *yurra* 'lie', and *nirra* 'sit', and observing that R is contiguous with Burarra at least, one might suspect borrowing. However, apart from the unlikelihood of borrowing inflected verbs in a tightly organised paradigm, this explanation has two problems: firstly the formally most similar forms are those in Ndjébbana, which is furthest from R, and secondly the formal match is not perfect: if borrowed from Burarra we would expect *cirra* rather than *turu*, for example. Descent of **th* as *t* in R clearly suggests an inherited form that has undergone apicalisation. We should also expect *nora* rather than *nura* for 'sit', for example, if the source was Ndjébbana, and *rr* rather than *r* throughout if the source was Burarra. For these reasons we consider the borrowing explanation unlikely. A second explanation, which would account for the striking similarities between the R and Maningrida forms, would be to see these forms as archaic, but their function as innovative. This second explanation receives support from the existence of related forms in the irrealis of other GN languages: the Nu 'non-past 2' forms *lhara* 'stand' and *yira* 'lie', and the M irrealis forms *yu:ra-b* 'lie' and *rnura-b* 'sit', as well as the Ngan present forms *yurta* 'lie', *caka-thurta* 'stand', and *nurta* 'sit'. Taken together, these suggest that pGN possessed a series of forms from which the above were derived, although the semantics is currently unclear, and that these have survived in the M irrealis, the Nu 'non-past 2', and the R non-past. Further study of cognates outside GN may help focus our understanding of these forms — see R. Green (this volume) for more widely-based discussion of this series.

3.12 **ni-* 'to sit'

The third stance verb, **ni-* (Table 21), resembles 'lie' and 'stand' but is unlike 'stand' in that it shows no evidence of a double set of stems in the PP and NPST.

Table 21: Data relating to the reconstruction of pGN **ni-* 'sit'

pGN	Past Perfective **ninginy*	Past Imperfective **niny*	Non-past **ni*
W	*niwiny*	*nininy*	*ni*
Ja	*niyay*	*niyay*	*ni, nini*
D	*ninginy*	*niny*	*ni*
BGW	*ni*	*ni*	*ni*
R	*niyi*	*ninganiny*	*nura*
Ngal	*rnany*	*rnanganiny*	*rnangan*
Ngan	*rninginy*	*rni:*	NPST *nurta*
M	*rniny*	*rni*	*rni*

In the PP, reconstruction of **ninginy* is fairly straightforward, this form being attested in D (central) and Ngan (eastern). It is possible there was a pGN variant **ningany*, given the occurrence of a second *a* vowel in so many modern forms: Kunbarlang *rningany*, Ja *niyay*, and Ngal *rnany* if this arises from syncope.

The reconstructed PI form **niny* is a little less clear, being only clearly attested in the central branch (D), though W **nininy* may be a left-reduplicated reflex; the M PP form *rniny* is possibly a third attestation if it derives from an aspectual shift rather than syncope.[12] The confusion surrounding this TAM value may be related to the probable etymological and formal connection between the verb root **ni-* 'sit' and the past imperfective suffix **-ni*, which may have blocked the expected past imperfective form *nini* by some sort of haplology rule.

The NPST has widespread reflexes in *ni*, supporting straightforward reconstruction of **ni*. As with the other stance verbs, R has an aberrant NPST form (here *nura*) which is likely to be a semantic specialisation of an archaic form with some sort of marked non-past semantics (see discussion at end of previous section).

3.13 **ma* 'to get', **-me-* 'inchoative', and **(-)ma-* 'thematic; do, say'

The three verbs **ma-*, **-me-*, and **(-)ma-* will be considered together (Tables 22–27) because their paradigms have been conflated and/or their meanings have shifted in various ways in some of the GN languages. These conflations and shifts of meaning have arisen partly because of the phonological similarities between the three roots, and partly because of the commonalities in meanings between 'do, say', 'get', and 'become/inchoative' (see Merlan 1993).

Of the three verbs, the inchoative is always bound in all GN languages (i.e. it is a thematic functioning as a derivational suffix, predominantly attached to adjective roots), the 'do, say; thematic' form *ma* is always bound in most GN languages but can occur independently in M and in some non-GN languages with a cognate verb, while 'get' is free in all languages except for some complications in Ja to be discussed below.

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12 This form is also problematic in failing to undergo final denasalisation, perhaps conditioned here by the preceding nasal.

First, consider BGW and Ngal (Table 22), both of which keep all three verbs distinct.[13] Because of the complications that arise when the three verbs are collapsed to two, we will offer a first-pass reconstruction at this stage and then adjust it where necessary in the light of forms from further languages, to be considered below.

Table 22: Conjugation of the three three **mV-* verbs in BGW and Ngal

	Past Perfective	Past Imperfective	Non-past
ma- 'get'	**mey* (but see below)	**manginy*	**mang*
BGW	*mey*	*manginy*	*mang*
Ngal	*meq-me*	*manginy*	*maq-ma* (Pres), *mangi* (Fut)
-me- 'inchoative'	**-miny* ~**-meny*	**-meniny*	**-men*
BGW	*-miny*	*-meni*	*-men*
Ngal	*-meny*	*-meniny*	*-men*
-me- 'thematic'	**-mVny*	**? (see below)	**-me* (but see below)
BGW	*-meng*	*-mi*	*-me*
Ngal	*-miny*	*-miyiny* ~ *-meriny*	*-ø*

The cognacy of most forms here is clear; the PI of 'get' and the inchoative and the NPST of the inchoative require no comment. The PI of thematic **-me-* is impossible to reconstruct just from these two languages and will be discussed below.

Ngal, along with R and (optionally) D, has dropped the thematic in the non-past, allowing the prepound to appear alone — compare Ngal PP *wulupminy* '(s)he bathed' with PRES *wulup* '(s)he bathes'. This appears to be an innovation in these three contiguous languages. Though NPST **-me* is the obvious candidate from these data, we will revise it below in favour of **-ma-r* (see Table 27).

The PP of 'get' appears from the evidence of these two languages to have been **mey*, with monophthongisation to *me* to Ngal and subsequent reduplication, but the evidence from other languages will lead us to revise this slightly, to **ma-y*.

We shall see below that the BGW PP form of the thematic, *-meng*, is anomalous, and it is likely to be an analogic intrusion from other *e*-final thematics such as *-keng*, with which it is paired in many intransitive vs transitive oppositions such as *pakmeng* 'broke (intr.)', *pakkeng* 'broke (tr.)'. This suggests *-miny* as the proto-form, though further evidence shows the vowel to be problematic.

Finally, the PP of the inchoative is clearly *-mVny*, but the vowel quality is not straightforward: is the *i* original (perhaps with analogic regularisation in Ngal from the other TAM values, which all have *e*), or is the *e* original, with fronting before the palatal in BGW?

In fact some non-GN languages have both vowel forms: in Tyemeri the perfective is *meny* in the 3sg perfective and *miny* for other person-number values of the perfective, but it is unclear whether this continues an original vowel alternation or represents the falling together of two original *mV* verbs.

Although the form of some of the TAM values of these verbs is unclear, it should be clear from the foregoing that three distinct verbs can be reconstructed. However, several GN languages have lost one or more of these, sometimes resulting in conflation of paradigms.

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13 In fact BGW has a fourth form, *-qme*, which derives a few deadjectival causatives, e.g. √*kele* 'afraid' > *keleqme* 'scare'. Apart from its initial q this is formally identical to the thematic *-me*.

Consider the case of Ja, in which the 'get' verb shows alternate forms in the PP, PI, and NPST (Table 23).

Table 23: Alternate forms of the 'get' verb in Ja

Past Perfective	Past Imperfective	Non-past
mi	*ma-ng-ay*	*ma-ng*
-ma-ny	*m-ay*	*-ma-r*

This verb is the most common thematic in Ja, and some of these forms occur only in thematic functions. There is an important contrast in the use of the two PP forms: *-mi* is used only with transitive verbs, and *-ma-ny* is used mainly with intransitive verbs.

This 'get' verb conjugation of Ja, with its distinct forms reflecting transitivity, actually conflates two pGN verbs: the first row above reflects **ma-* 'get', and the second reflects the **-me-* thematic.

We now fine-tune our reconstructions of the three verbs, bringing in the full set of GN attestations one verb at a time, but with an eye out for analogic leakages from one verb paradigm to another.

The full set of forms for the 'get' verb (excluding the second set of Ja forms in Table 23, for the reasons just mentioned) is given in Table 24.

The PI has the least complicated set of correspondences. The W PI form *mayim* is irregular and unrelatable, either to any other PI form in W or to the forms in the other languages. The M PI form *mi-nyi* is not a regular reflex of **ma-ng-iny*. However, we may note that M shows a similar reflex with the verb **thu-* 'to tell off' which has the same paradigm as **ma* 'to get': **thu-ng-iny* > *cu-nyi* (§3.16). The other languages show standard reflexes. The M NPST form is also unrelated and appears to result from analogical reformation. The 'get' root in M is *mi* in forms other than the PP, and many verbs in M take a *-Ø* in the Present.

The D, Ja and BGW NPST forms reflect **ma-ng* directly. In Ngal and R, the Present takes a *-Ø* suffix. As with M, this is common for the Present. However, the Future and Potential forms, which were historically based on the Present, preserve the **-ng* inflection. W shows an irregular, but nonetheless attested (Harvey this volume, Chapter 8), **ng* > *ny* change. W also shows this change in the paradigm of **thu-* 'to tell off' (§3.16).

Table 24: Full set of forms for **ma-* 'get'

**ma* 'to get'	Past Perfective	Past Imperfective	Non-past
pGN	**ma-y*	**ma-ng-iny*	**ma-ng*
Ja	*mi*	*ma-ngay*	*ma-ng*
W	*mi*	*ma-yim*	*ma-ny*
BGW	*me-y*	*ma-ngi*	*ma-ng*
D	*me-(y)*	*ma-nginy*	*ma-ng*
Ngal	*meq-me-Ø*	*ma-nginy*	*maq-ma* (Pres), *ma-ng-i* (Fut), *ma-ng-a* (Pot)
Ngan	*ma-y*	*ma-ngi*	
Nu	*mi-ny*	*ma-ngi*	
R	*mi-ya*	*ma-nginy*	*ma* (Pres), *ma-ng-a-ra* (Fut)
M	*ma-y*	*mi-nyi*	*mi* (Pres)

For the PP, recall that we reconstructed **mey* on the basis of the BGW and Ngal forms (with monophthongisation to *me* in Ngal). The Ngan and M forms, however, both *may*, suggest that **may-* was the original form; there is also the Kamu cognate *ma-y* 'get-PP', which provides further evidence that the root vowel in the PP was **a*. From **may*, assimilatory raising would have yielded *mey* (preserved in the BGW form and one D variant) and monophthongisation to *mi* in Ja and W (and *me* in another D variant). The R form results from vowel breaking, **me* > *miya*. As with **po* > *puwa* 'hit-PP' (§2.2), the resulting disyllabic form has been reanalysed as root+suffix.

The status of the Nu PP form is uncertain. Most likely it is an intrusion of the form *-miny* or *-meny* from the inchoative paradigm (see below).

We now pass to the second root, the inchoative. Note that this is always bound in all GN languages in which it occurs, and will never bear stress since it coheres into a foot with the preceding noun or adjective root it is suffixed to. With regard to its semantics, note that in Ja this verb functions simply as an intransitive thematic and does not have an inchoative meaning; and in other languages, such as BGW, there is also a range of intransitive uses besides the commonest, inchoative, use, so 'inchoative' is at best its proto-typical meaning diachronically. The relevant TAM-forms of this root are shown in Table 25; we omit the Nu inchoative, which formally groups with the thematic *-me* to be discussed below.

Table 25: Forms containing reflexes of $*]_{adj}$-*me*-$]_v$ 'inchoative'

	Past Perfective **-me-ny ~ *-miny*	Past Imperfective **-me-n-iny*	Non-past **-me-n*
Ja	*-me-ny*	*-me-nay*	*-me-n*
BGW	*-mi-ny*	*-me-ni*	*-me-n*
D	*-mi-ny*	*-me-niny*	*-mû-n*
Ngal	*-me-ny*	*-me-niny*	*-me-n*
R	*-mi-ny*	*-miya-n-iny*	*-ma-n* (Pres), *-miya-n-a* (Fut)

Recall that in our first pass through this reconstruction there was no decisive evidence favouring the *-meny* variant over *-miny* or vice versa. Our expanded data set does not solve this problem, and interestingly both variants occur in representatives of two GN subgroups — *-miny* in Central and Eastern, and *-meny* in Central and Western. Recall also that the non-GN language Tyemerri has both forms, conditioned by person-number. At this stage it seems safest to maintain both variants in our reconstruction.

The PI and NPST forms are straightforward in most cases, with the regular Ja development of **-iny* > *-ay*, regular loss of final **-ny* in BGW, vowel breaking from **e* to *iya* in the R PI form. The R NPST form *-ma-n* is irregular and may reflect a pathway **-men* > **-miyan* > *-man*, with the last step an irregular syncope affecting what would always be an unstressed syllable in a ternary foot.

Although this verb is bound in all GN languages, there are languages outside GN in which **me* is an independent verb meaning 'to do, to say'. There is a cognate independent 'do/say' verb in Kamu with a closely corresponding root and the requisite suffixal allomorphy: PP *miny*, PI *mini*, and PR *min*; cf. also Maung 'do; say', with PP *miny*, present *min* and past continuous *minang*.

We may also note the paradigm of the Tyemerri 'do/say' verb in Table 26.

Table 26: Paradigm of the Tyemerri 'do/say' verb *me-~ mi- ~ mu-*

	Perfective	Past Imperfective	Irrealis	Present
3sgS	*me-ny*	*me-yi*	*mu*	*me-m*
Other S	*mi-ny*	*me*	*mu*	*mu-m*

These forms provide evidence for an independent **me/i* 'do/say' verb at a deeper level than pGN and suggest that it grammaticalised to a bound form at or before the pGN stage.

Finally, let us consider the third verb in the series, for which the full set of forms is given in Table 27. Note that the Nu form actually functions as an inchoative, but is included here because it formally matches this verb rather than the inchoative in the other GN languages.

Table 27: Gunwinyguan reflexes of the verb **(-)ma-* 'do; say; thematic'

	Past Perfective	Past Imperfective	Non-past
pGN	**-ma-ny*	**-marany ~ *-mariny*	**-ma-r*
Ja	*-ma-ny*	*-may*	*-ma-r*
BGW	*-me-ng*	*-mi*	*-me-Ø*
D	*-mi-ny*	*-mi-ny*	*-mû ~ -Ø*
Ngal	*-mi-ny*	*-mi-yiny ~ -me-riny*	*-Ø*
R	*-mi-ny*	*-mv-rn*	*-Ø*
Ngan	*-mu-ng*	*-mi-ri*	*-ma-rang*
Nu	*-ma-ny*	*-maa*	
W	*-mi-ny*	*-ma-rl-any*	*-ma-rl*
M {	*(-)ma-ny*	*(-)ma-ri*	*(-)ma-Ø*
	-mi-ny	*-mi-ri*	*-mi-Ø*

This third verb is bound in all the GN languages except M, and in these languages it usually has no evident root-level semantic content, functioning purely as a verbaliser. In BGW, the glottal-stop initial variant *-qme-* does have specific semantic content, with the two meanings 'cause to be [adj]', e.g. *keleqme* 'scare' (< *kele* 'afraid'), 'call [KIN]', e.g. *ngalkurrnghme* 'call mother-in-law' (*ngal-kurrng* 'mother-in-law'), and 'say/go X' (e.g. *nganghme* 'bellow, go *ngang*'). Derivations of the last two types suggest it may once have meant 'say, do' but lost this meaning in most of the languages and underwent semantic bleaching to a mere thematic. In M, however, in addition to being the predominant thematic conjugation, it can appear as an independent verb with the meaning 'do, say'; note that verbal compounding is not productive in M and that new verbal predicates are constructed through coverb + aux constructions (Merlan 1981:129). M also has a form *-mi-*, showing the same paradigm as *ma*, which appears only as a thematic. The M data suggests that, for pGN, we should reconstruct this verb as occurring both free (meaning 'do; say') and bound (as thematic).

In Ngal, R, and W, new verbal predicates are formed with this conjugation as the verbaliser. In these three languages, this conjugation is the numerically predominant conjugation. The same is true of Ja, allowing for the merger with the 'get' verb conjugation. In D and BGW, this conjugation is productive though not completely open and is numerically predominant.

There are a number of complexities in the reconstruction of this conjugation. We may begin with the NPST; this stands out as the only reconstructed TAM inflection on a widely attested GN verb ending in something other than a vowel or a nasal. This reconstruction is based on the Ja and W forms, respectively *-ma-r* and *-ma-rl*, plus the evidence for an original retroflex continuant contained in the Ngan form *-marang* (recall that the Ngan forms regularly add *-Vng* to the NPST form reconstructable from the other GN languages), and possibly the D form *-mv* (since retroflex environments are a common conditioning factor for the development of the high central vowel *v* in Dalabon).

M and BGW have a *-Ø* suffix. In this case, the root vowel is reconstructable as **a*, found in the NPST forms in five of the eight languages. The BGW form with *e* reflects an irregular, but old, raising of **a* > *e* in word-final syllables (Harvey this volume, Chapter 8). As discussed above, Ngal and R simply drop the thematic in the NPST, and this is an option in D as well. The *i* vowel in the M thematic form *-mi-Ø* appears to reflect analogic influence from the thematic forms of the PP and PI; the sources of the *i* vowel in these two forms are considered in the ensuing discussion.

Loss of the final **-r* in the remaining languages would have been motivated both phonologically and analogically. In the cases of BGW and W, there has been a general diachronic trend to delete or replace *r* in coda positions (Harvey this volume, Chapter 8). BGW deletes *r* in coda positions (though with remnants in some words in some dialects). W shows both deletion and replacement with *y*, *l*, or *rl*. Therefore both the BGW *-me-Ø* and W *-ma-rl* forms are standard, if not completely regular, reflexes of a proto-form **ma-r*. In other languages, such as D and M, there is no evidence for deletion or replacement of codal *r*, so that the loss of final **-r* cannot be viewed as phonologically motivated, even irregularly. In such cases the most likely source for the *-Ø* suffix is analogical reformation, based on the many verbs that take a *-Ø* present suffix in D and M. In D the motivation for this analogic reshaping would have been strengthened by the fact that the inflected form of all other verbs ended in either a vowel or a nasal, and comparison with its nearest relative, BGW, where the same condition holds, suggests that this is a pattern going back at least to Proto D-BGW.

The PI shows considerably more variation than the NPST but also preserves the reconstructed **r* in a larger number of languages, probably because it was protected by following material from syllabification as a coda and subsequent loss. We reconstruct alternant vowels for pGN because neither *a* nor *i* unproblematically generates all the modern vowel attestations. The *i* variant motivates assimilation of the first vowel to *i* in a number of modern languages, but the *a* variant better accounts for the W and Nu forms. From these two reconstructed variants we derive the modern forms as follows (in most cases we give one of the two variants only as the source):

(a) W: **-ma-r-any* > *-ma-rl-any*
   (i) Replacement of intervocalic **r* by *rl* by analogy with the NPST form.

(b) M: **-ma-r-iny* > **ma-ri* > ~ *-mi-ri*
   (i) Replacement of the **-iny/-any* PI allomorph by a predominant *-i* allomorph
   (ii) Regressive vowel harmony

(c) Ngal: **-ma-r-iny* > **-me-r-iny* ~ *-mi-y-iny*
   (i) Root vowel partially (to *e*) or completely (to *i*) harmonised to the *i* suffix vowel
   (ii) Replacement of **r* by *y* in the *-mi-y-iny* variant

(d) Ngan: **-ma-r-iny* > *-mi-ri*

(i) Replacement of the **-iny* PI allomorph by a predominant *-i* allomorph

(ii) Root vowel harmonised to suffix vowel

(e) R: **-ma-r-any* > **-ma-r-ny* > *-mvrn*

(i) Final unstressed vowel deleted: **ma-r-any* > *-ma-r-ny*

(ii) Resulting final **r+ny* cluster is reduced to single segment *rn* preserving the place of articulation of the continuant and the manner of articulation of the nasal. We may note that retroflex nasals do not otherwise occur in the PI in R, or any other GN language.

(iii) Vowel reduced to *v*.

(f) Ja: **ma-r-any* > **-mar-ay* > *-ma-y*

(i) Lenition of final nasal element **-ma-r-any* > *-ma-r-ay*

(ii) Deletion of **r*.

(iii) The resulting [*maai*] form is a highly marked trimoraic syllable and is reduced to [*mai*] *-ma-y* by shortening the *a* vowel. Given that this conjugation was and is the predominant open conjugation in Ja, the PI forms in other conjugations have been remodelled to *-ay* on the basis of this conjugation.

(g) Nu: **ma-r-any* > *-maa*

(i) Loss of final nasal element **ma-r-any* > *-ma-r-ay*. Nu otherwise deletes the final nasal element in the PI.

(ii) Deletion of **r*. As previously mentioned, loss of intervocalic **w* is a fairly regular process in Nu (Heath 1978a:40), so the deletion of intervocalic **r* may be a regular pattern. However, this cannot be tested as there are no widespread reconstructable forms with intervocalic **r*, for which Nu has reflexes.

(iii) The resulting [*maai*] form is a highly marked trimoraic syllable and is reduced to [*maa*] *-maa* by deletion of the final vowel.

(h) D: **-ma-r-iny* > **-mi-r-iny* > *-mi-ny*

(i) Root vowel harmonised to new *i* suffix vowel.

(ii) Deletion of **r* (possibly in stages: **miriny* > **miyiny* > *miiny*)

(iii) Reduction of impossible sequence **ii* to *i*.

(i) BGW: **ma-r-iny* > **-mari* > **-miri* > **-miyi* > *-mi*

(i) Replacement of the **-iny* PI allomorph by a predominant *-i* allomorph, giving **mari*

(ii) Root vowel harmonised to new *i* suffix vowel, giving **miri*

(iii) Assimilation of **r*, giving **miyi*

(iv) Reduction of *i(y)i* to *i*

Not all of these changes are regularly attested, but the fact that the source form would have involved the unstressed second and third syllables of a ternary foot may have licensed a number of reductive and assimilatory changes.

The reconstruction of the PP for the **ma* 'do/say' verb presents fewer complications than the reconstruction for the PI. The root vowel, as in the other tenses, is reconstructable as **a*; it continues unchanged in Ja, Nu and one M variant. The *-mi-ny* form found with the other

M variant, and in D, Ngal, R, and W reflects a partial collapse of this paradigm with that for inchoative **-me*. The analogic source of the BGW form *-meng* from the transitive thematic *-keng*, with which it is often paired, was discussed above and is supported by the many other verbs whose PP ends in *-ng*. The *-ng* suffix in Ngan is also not a regular reflex of **-ny* and is most probably also an analogic reformation on the basis of other *-ng* Past Perfective forms.

3.14 **patca-* 'to punch'

This is one of the few reconstructable disyllabic pGN verbs. Some sources inside and outside GN treat this as a derived reciprocal/reflexive stem — thus Merlan (1983:189) calls it an 'infrequent suppletive stem of *bu-yji-* [the reflexive/reciprocal of 'hit' — AEH] following compounding element' and Glasgow (1994:63–64) derives the Burarra form *bacha* (*pac:a*) 'fight one another' from *pay* 'eat, bite, hurt' plus *-ci-* 'reciprocal' plus *-ya* 'reflexive'. Even if this verb is ultimately a lexicalised form of an old derived stem, its reflexes in GN suggest it should be reconstructed as a primary stem in pGN. For example, the BGW PP form *pacci* and the R PP form *patciya* do not correspond to the reflexive/reciprocal forms of either 'hit' or 'bite', which in BGW would be, respectively, *purriny* and *payerriny*. The attested forms are given in Table 28.

Table 28: Forms attesting **patca-* 'punch'

	Past Perfective	Past Imperfective	Non-past
pGN	**patci*	**patca-ng-iny*	**patca-ng*
BGW	*pacci*	*pacce-ngi*	*pacce-ng*
Ngal	*pacci*	*pacci-ny*	*pacca-Ø* (Pres), *pacca-ng-a* (Fut), *pacca-ng-i* (Pot)
R	*patci-ya*	*patci-ny*	*patca-Ø*, *patca-ng-a-ra* (Fut)
Ngn	*pacci*	*pacca-ngi*	*pacca-ng* (Fut)
Nu	*patci-ny* /$C_{[-cont]\_}$, *watci-ny* /$C_{[+cont]\_}$	*patca-ngi* /$C_{[-cont]\_}$, *watca-ngi* /$C_{[+cont]\_}$	

The semantics and combinatorics of this verb vary somewhat:

BGW	'to punch'
Ngal	suppletive stem for *pu-yci-* 'to hit-reflex/recip' found chiefly in compounds.
R	'to hit'
Ngn	'to hit' — chiefly occurs in compound, where it appears instead of *pu* 'to hit'
Nu	suppletive stem for *pu* 'to hit' found only in compounds.

Given that **pu* can be reconstructed with the meaning 'to hit', this verb is presumably to be reconstructed with the more specific 'punch' meaning found in BGW. Its meaning has become more general in the other languages. In Ngal, Ngn, and Nu, it functions chiefly as a suppletive compound stem of 'to hit'.

The medial cluster is to be reconstructed as **tc*, with BGW, Ngal, and Ngn showing assimilation to a geminate. The NPST shows a regular set of reflexes of **-ng*. BGW shows the raising of **a* > *e* in final syllables, which is found sporadically elsewhere (Harvey this

volume, Chapter 8). Allowing for this raising, the BGW, Ngn and Nu PI forms are all regular reflexes of **patca-ng-iny*, which is based on the NPST in the standard way. The PI forms of Ngal and R are not regular reflexes of **patca-ng-iny*, but appear to reflect an irregular reduction of a trisyllabic form to a disyllabic form.

The PP forms of BGW, Ngal, Ngn, and Nu reflect **patci*. Nu shows nasal epenthesis, as it does in a number of other paradigms. The R PP form *patci-ya* does not regularly derive from **patci*. Rather, it appears to reflect analogic reformation, as the other verbs belonging to this conjugation in R take *-ya* in the PP. The marking of the PP in pGN by the change of final vowel is comparatively unusual. The other verbs which take **-ng* in the NPST and **-ng-iny* in the PI take **-y* in the PP (**ma* 'to get', **tho* 'to chop, to crush', **thu* 'to tell off'). This suggests that **patci* may derive from **patca-y*, at an earlier stage.

3.15 **tho-* 'to chop, to crush'

The reflexes of **tho-* are shown in Table 29.

Table 29: Forms containing reflexes of **tho-* 'chop, crush'

pGN	'to chop, to crush'	Past Perfective **tho-y*	Past Imperfective **tho-ng-iny*	Non-past **tho-ng*
Ja	'to crush'	*co-kki*	*co-ngay*	*co(yo)-ng*
BGW	'to strike, crush'	*to-y*	*to-ngi*	*to-ng*
Ngal	'to chop'	*ce*	*co-nginy*	*co-Ø* (Pres), *co-ng-a* (Fut), *co-ng-i* (Pot)
Ngn	'to chop'	*tho-ng*	*tho-ngi*	*tho-ng* (Fut)
Nu	'to chop'	*lhi-ny*	*lha-ngi*	

As can be seen, this verb has the same paradigm as **ma-* 'to get'. The PI and NPST forms follow regular patterns. The PP shows a number of complexities. The BGW, Ngal, and Nu forms can all be related as reflexes of **tho-y*. Ngal shows a reduction of the diphthong **oy* > *e*. Nu has, again, analogically extended the predominant *-ny* final into this conjugation. The source of the *-ng* PP inflection in Ngn is unknown, unless it stems from analogy with a number of other verbs whose past perfective continues **-ng*. The source of the *-kki* PP inflection in Ja is likewise unknown.

3.16 **thu-* 'to tell off'

Reflexes of **thu-* have a rather wide semantic range (Table 30). (A further apparent indirect cognate is Nu *-lhunyma-* 'to curse someone, to apply black magic to someone'; *lh* is the regular Nu reflex of pGN initial **th*, and it appears this root is a compound of the PP *lhuny* with a further thematic *ma-*). The various meanings, nonetheless, are relatable to one another. The connection between the 'tell off' meaning in D, M, and BGW, and the 'say/do' meaning in Ja and W becomes more evident when the following pair of cognates is considered.

Wagiman		W	
warle	'to tell off'	*warli*	'to cry/yell (out)'

The sequence of semantic connections appears to be 'tell off/yell at' > 'yell out/cry out/ exclaim' > 'say' > 'say/do'.

Table 30: Forms containing reflexes of **thu-*

pGN	'to tell off'	Past Perfective **thu-ny ~ *thu-y*	Past Imperfective **thu-ng-iny*	Non-past **thu-ng*
Ja	'to do, to say'	*cu-y*	*cu-ngay*	*cu(yu)-ng*
W	'to do, to say'	*ci-yi*	*cunguc-iny*	*ci-ny*
BGW	'to scold, to tell off'	*tu-y*	*tu-ngi*	*tu-ng*
D	'to tell off'	*tu-ny*	*tu-nginy*	*tu-ng*
Ngn	'verbaliser'	*-thi*	*-thu-ngi*	*-thu-ng* (Fut)
M	'to swear at'	*cu-c*	*cu-nyi*	*cu-k*

The verbaliser meaning found in Ngn is a further development from the 'say/do' meaning, parallelling the synthetic use of the 'say/do' verb in verb-plus-satellite constructions in BGW (where the relevant verb is *yime*, e.g. *blockim...-yime* 'block (in sport)'), and in auxiliary-plus-preverb constructions in M.

There are two reasons for reconstructing the original meaning as the more specific 'to tell off, swear at' meaning found in M and BGW. Firstly, there are other verbs reconstructable with the 'say' meaning for various stages of pGN: **yi-* (§3.17), possibly **ma-r*, and the compound **ya-ma-r*. It is therefore unlikely that 'say; do' is the original meaning of this verb. Secondly, cognates of this verb in other languages mean 'to tell off, to swear at', or similar. Examples are Kayardild *thuu-* 'swear, swear at, tell off' and Ndjébbana *có-* 'berate, be angry with'.

The root vowel is reconstructable as **u*. The *i* vowel found in the Ngn and W PP forms reflects assimilation: Ngn **[cui] > **[thii] > [thi], W **[cui] > [ci$i] > [ciyi], where $ marks a syllable boundary. The *i* vowel in the W NPST form results from fronting between two palatals: **thu-ny > ci-ny*. This change presumably occurred after the NPST suffix had undergone the irregular **ng > ny* change in W. This change is also found with the NPST form of 'get' in W (§3.13), and elsewhere (Harvey this volume, Chapter 8). The other languages reflect **-ng* as the NPST suffix. M shows a stop reflex, as with a number of other forms.

An irregular **-ny* suffix also appears in the W PI form *cunguc-iny*. This highly irregular form probably derives from a PI form with a reduplicated stem, **thungu-cu-ng-iny*, which was irregularly reduced from a quadrisyllabic form to a trisyllabic form. The M PI form *cu-nyi* is also irregular, though it parallels the M reflex of **ma-ng-iny* 'get-PI': *mi-nyi*.

The PP form is reconstructed with two variant endings — one with a palatal nasal, retained in D and denasalised to *c* in M, and another with final **y*, continued in the other languages. The **y*-final form may reflect irregular lenition of final **-ny*.

Heath (1978a:93–96) proposes that this verb is a borrowing into Ngn from the Yolngu language variety Ritharrngu, where a verb *-dhu* is the principal verbaliser. However, Heath reconstructs the paradigm of this verb in Proto Yolngu as **-dhu-na* 'Past', **-dhu-n* 'Present', **-dhu-rru* 'Future'. The Yolngu suffixal paradigm is unrelated to the Ngn suffixal paradigm, and in comparison with the paradigms given here, the Yolngu paradigm is not a

plausible source for the Ngn verbaliser. This is thus an interesting case of claimed diffusion turning out to be a case of shared (deep-level) inheritance once comparative work is done in more detail. We shall see a further case when we discuss the inchoative below.

This verb also has reflexes in Nu, though no longer with any separable synchronic function (Heath 1978a:95): *-thi-ny* PP, *-tha-ngi* PI. The PP form involves epenthesis of a final nasal element, as do the Nu reflexes of other PP forms with **-y* ('to give', 'to see', 'to get'). It also involves the vowel fronting found in Ngn and W. The *a* vowel which is found in the PI form is not a regular reflex, but appears instead to reflect analogic reformation. The other verbs in this conjugation have /a/ as their root vowel in the PI, including **ma* 'to get'.

3.17 **yini* 'to do, to say' and **ya-ma-* 'to tell off'

In most GN languages the 'say/do' verb involves an element *ya ~ yi*. These *ya ~ yi* elements appear to derive from two distinct sources. One source is a verb **yini* (Table 31), which continues only in an areally contiguous bloc containing D, R, and Ngal among the GN languages, though in D the form is only found in the PP of 'say', suppletive with forms based on a root *yenycung* in the other TAM values. This monosyllabic verb also appears to underlie the independent form of the Kamu detransitiviser (Harvey this volume, Chapter 6).

Table 31: Forms containing reflexes of **yini-* 'say, do'

	Past Perfective	Past Imperfective	Non-past
pGN	**yininy*	**?*	**yini(q)*
D	*yininy*	---	---
Ngal	*yini-ny*	*yini-ng-iny*	*yini-Ø* (Pres), *yini-ng-a* (Fut), *yini-ng-i* (Pot)
R	*yini-ny*	*yinv-mvrn*	*yinvq-Ø* (Pres), *yinq-na* (Fut)

While the PP is straightforward, and the NPST is likely to have been **yini(q)*, with vowel centralisation in the R present form, the PI forms are insufficient to allow a reconstruction.

A second source of *ya ~ yi* 'do/say' verbs is a compound of a prepound root **ya(ng)* and the thematic verb **ma-r* as an auxiliary (note that in D the root *yang* means 'speech, language') (Table 32).

Table 32: Forms containing reflexes of **yama-* 'say, do'

	Past Perfective	Past Imperfective	Non-past
pGN	**ya-ma-ny*	**ya-ma-rany ~ *ya-ma-riny*	**ya-ma-r*
W	*ya-mi-ny*	*ya-ma-rl-any*	*ya-ma-rl*
BGW	*yime-ng*	*yimi*	*yime-Ø*
Ngn	*yimi-ny-q(-thi)*	*yimq-yimi-ri-q*	*yima-r-ang-q(thu-ng)* (Fut)
Nu	*yama-ny*	*yamaa*	

In W, this verb means 'to tell off', but in the other languages it means 'to do, to say'. The same relationship of meanings is found with **thu* 'to tell off' (§3.16). In BGW this verb has

exactly the same paradigm as thematic *-me-* discussed above; the change in the first vowel from *a* to *i* may reflect earlier influence from a verb **yini* 'say, do', now lost. The Ngn paradigm has an unusual structure: the standard inflectional suffixes are followed by glottal stops, which are characteristically final in prepound roots. This combination may then optionally be compounded with the productive verbalising auxiliary *-thu* of Ngn (§3.16).

3.18 Some verbs that are less well-attested

A large number of other verbs appear reconstructable for pGN, but space prevents us from tackling that challenge here. We merely list a number of the more important ones for the sake of future research; for brevity's sake we normally cite only the PP and NPST form. Note that two of them, **pa(ya)-* and **ca(ra)-*, have a second syllable augment appearing in some TAM values only, typically the PP.

**kinye-* 'cook, burn': BGW PP *kinyeng*, NPST *kinye*; D PP *kinying*, NPST *kiny*. Cognates outside GN include Maung 'cook' PRES *wunya*, PP *wunyan*.

**nganka-* 'talk': Ja PP *ngankany*, NPST *ngankar*; Uwinymil NPST *nganke*. Cognates outside GN include Kungarakany PP *ngenkiny*, NPST *ngenkem*; Larrakiya PP *anking*, NPST *ankam*; Maung 'talk; arguc' PP *nginkang*, NPST *nginka*.

**wonga-* 'leave': Ja PP *wongany*, NPST *wongar*; Wa PP *wungany*, NPST *wungarl*. Cognate outside GN: Jaminjung PP *wungany*, Pres *wungam*.

**pa(ya)-* 'bite': BGW PP *payeng*, NPST *paye*; D PP *panginy*, NPST *pang*; Kunp *peyang*, NPST *peye*, Nu PP *pang*, NPST *pang*, Ngal PP *peny*, Pr *pe*; Ngn PP *pang*, PR *pangana*, W PP *piny*, NPST *pe(rr)*. Cognates outside GN are numerous, e.g. Kungarakany PP *peyang*, NPST *payam*, Bur *pay* etc.

**na(ya)-* 'burn (tr.)'. Ngal PP *ne-ny*, Ngan PP *na-ng*, R PP *ne-ny*, NPST *niya*; Nu PP *nang*. Non-GN cognates are often intransitive rather than transitive; they include Kayardild *na:-ca* 'burn (intr.)', Wambaya *nacpi* 'burn (intr.; tr.)' and Ngaliwurru *na-* 'burn'.

**ca(ra)-* 'eat'. Ja PP *ca-y*, NPST *ca-r*, *ca-ra*; Wa *cany*, NPST *carl*; Kunp PP *carrang*, NPST *cin*; M PP *cirak*, NPST *ca*. Among the many non-GN cognates are Kung PP *carang*, NPST *cur*; Ndjébbana *cí*, Alawa PP *ci*.

**we-* 'throw': BGW PP *weng*, NPST *wen*. Non-GN cognates include Lardil *were* 'throw'.

**yu-* 'put down': D PP *yuny*, NPST *yung*; Ngan PP *yung*, POT *yongini*. This may be related to the root *yu-* 'give' that is widely attested in PN.

In addition to these monomorphemic verb lexemes, there are many morphologically complex verbs, particularly those based on thematic **ma-*, which can be reconstructed for pGN and sometimes beyond. Again we confine ourselves here to a couple of examples with **ma-*. The GN verbs listed here conjugate like the **ma-* thematic.

**noma-* 'smell (tr.), sniff': Ja *noma*, BGW *nome*, Mng *numa* 'smell (tr.)'; outside GN note Gup *nhuman* 'smell, sniff around'.

**kutma-* 'put down': BGW *kurrme* 'put (down)', Ja *kotmar*, Wa *kutmarl*.

**katma-* 'grasp, pick up, have': BGW *karrme* 'grasp, have'. Outside GN note Kayardild *karrma-* 'grab, wrestle, have'.

**ngokma-* 'howl; bark': BGW *ngokme* 'howl', Wa *ngokmarl* 'howl', Ngal PI *ngokngokmeriny*.

3.19 Verb derivational suffixes: reciprocal, reflexive, inchoative

Most GN languages have a set of derivational suffixes, falling into two classes; each then feeds regular TAM inflection.

(a) V → V, especially those deriving reflexive and/or reciprocal verbs from transitive stems. There are also suffixes deriving causative from intransitive verbs but these show great variation across languages and do not have obviously reconstructable forms.

An example of a language with distinct reflexive and reciprocal derivations is Ngn: cf.. *rtak-thu* 'cut'; *rtak-th-i* 'cut oneself, become cut'; *pu-* 'hit', *pu-ythi-* 'hit each other, fight'. Reflexive **-yi-* and reciprocal **-nci-* have widespread cognates in other non-Pama-Nyungan languages, as well as some Pama-Nyungan, although many languages have generalised one form or the other to become a combined reflexive/reciprocal marker. Sample cognates are given in Table 33.

In all of these languages the relevant suffix is positioned between root and TAM suffix, as in GN. The ubiquity and formal and combinatoric similarity of these forms make it clear they go back beyond pGN.

(b) N/Adj → V, typically with meaning 'become X'; unlike the V → V suffixes, these typically attach to a noun/adjective, or sometimes to a prepound, rather than a verb stem. Two pGN suffixal alternants are **-th:i-* and **-ci-*, 'become Adj', attested in W and Ngn, as well as the inchoative thematic **-me-* discussed in §3.13 above.

3.19.1 The reflexive and the reciprocal

Table 33: Some cognate reflexive and reciprocal forms in selected nonPN and PN languages

Language Family	Language	Form	Function
non-Pama-Nyungan			
Worrorran	Ungarinyin	*V-yi*	reflexive/reciprocal
	Worrorra	*V-ye*	middle
Nyulnyulan	Warrwa	*V-nyci-*	reflexive/reciprocal
	Bardi	*V-inyci-*	
	Yawurru	*ma-V-nyci-;*	reflexive
		TR-V-nyci	reciprocal
	Nyigina	*-V-nyci-*	reflexive/reciprocal
Maran	Alawa	*-nyci-*	reflexive/reciprocal
	Warndarang	*ci- ~ -yi-;*	reciprocal
		-i-	reflexive
Tiwian	Tiwi	*V-athirri-*	reciprocal
Tangkic	Kayardild	*V-yi-;*	reflexive/passive
		V-nycu-	reciprocal
	Lardil	*V-yi-;*	reflexive/passive
		V-nyci-	reciprocal

Pama-Nyungan			
	Kulin	*V-therra*	reciprocal
	Warrgamay	*V-ncipa-*[14]	reciprocal
	Djabugay	*V-yi-;*	non-volitional/intransitivising
		V-(l)nycirri-	reciprocal

There are only three GN languages in which the reflexive suffix has a distinctive form: Ngn, Nu, and W (Table 34).

Table 34: Inflection of pGN reflexive *]$_v$-*yi-*

	Past Perfective	Past Imperfective	Non-past
pGN	**-yi-ny*	**-yi-n-iny*	**-yi-n*
W	*-yi-ny*	*-yi-n-iny*	*-yi-n*
Ngn	*-(y)i-ny*	*-(y)i-ni*	
Nu	*-i-ny*	*-ii-ni*	

In all the other GN languages, reflexive meanings are conveyed by the same suffix as for the reciprocal. The reciprocal suffixes in Ngn, Nu, and W are set out in Table 35, together with the cognate reflexive/reciprocal suffixes in the other GN languages.

Table 35: Inflection of pGN reciprocal *]$_v$-*nyci-* ~ *-nhthi-*

	Past Perfective	Past Imperfective	Non-past
pGN	**-nyci-ny~ *-nhthi-ny*	**-nyci-niny ~ *-nhthi-niny*	**-nyci-n ~ *-nhthi-n*
Ja	*-ci-ny, -yi-ny*	*-ci-nay, -yi-nay*	*-ci-n, -yi-n*
W	*-ci-ny*	*-ci-n-iny*	*-ci-n*
BGW	*-rri-ny*	*-rre-ni*	*-rre-n*
D	*-rri-ny*	*-rrû-niny*	*-rrû-n*
Ngal	*-cci-ny*	*-cci-niny*	*-cci-n*
R	*-tti-ny*	*-ttv-niny*	*-ttv-n*
Ngn	*-ythi-ny*	*-ythi-ni*	
Nu	*-nyci-ny*	*-nycii-ni*	
M	*-(ny)(ci)yak*	*-(ny)(ci)yi-ni*	*-(ny)(ci)yi-n*

Note that (a) in Ja *-c* is found following stops and nasals, and *-y* is found elsewhere; (b) the M reflexive/reciprocal has three allomorphs, *-yi*, *-ciyi*, and *-nyciyi*, whose distribution is lexically conditioned (Merlan 1981:154–155); (c) in Ngal *pu* 'to hit' takes a reflexive/reciprocal allomorph *-yci*, and *wo* 'to give' takes *-ycci*; (d) the Ngn reciprocal has three allomorphs: *-waythi* after consonants, and *-ythi* and *-ywoythi*, whose distribution is lexically conditioned, after vowels (Heath 1978b:93)

In addition to the non-GN cognates which, as mentioned above, support the reconstruction of a very old contrast between reflexive **-yi-* and reciprocal **-nyci-*, there are good reasons from within the GN family to reconstruct distinct reciprocal and reflexive suffixes with these forms for pGN itself. The great distance between W on the one hand, and Ngn and Nu on

[14] This is one among several allomorphs; the others are not clearly cognate: *-pa-*, *-kaba-*, *-nyaba-*.

the other hand, means that the distinctive reflexive forms cannot be analysed as an innovation. The distinctive reciprocal forms in Ngn and Nu appear to be cognate with each other and with the combined reciprocal/reflexive forms in BGW, D, M, Ngal, and R, suggesting that, in these languages, the original reciprocal suffix has extended its range to replace the original reflexive. This is a quite plausible development cross-linguistically. The status of the Ja reciprocal/reflexive and W reciprocal forms is uncertain, as these require consideration of another suffix, the inchoative (§3.19.2).

Reconstruction of the forms of the TAM endings found with these two suffixes is generally straightforward. The only form requiring comment is the M PP form *-(ny)(ci)yak*. This form is not a reflex of the pGN form but rather appears to involve a *-Cak* PP suffix, found elsewhere in the M verbal paradigms (Merlan 1981:155). The form of the proto-reflexive is also comparatively straightforward: **-yi*. Nu shows complete loss of the initial approximant, and Ngn shows variable loss.

Table 36 summarises the steps by which the modern forms can be derived from pGN **-nyci- ~ -nhthi-*. It does not attempt to account for the M increments *-yak* and *-yini* and the Nu long vowel in the PI, for which we have no explanation, but since there are no cognates of these increments inside or outside GN we assume they are language-specific innovations. We omit TAM suffixes to the reciprocal morpheme except where there are TAM-specific vowel alternations in the reciprocal morpheme itself; such alternations arise in BGW, D, and R, apparently conditioned by the nature of the following nasal in the TAM inflection, with *-ny* preserving the original *i* vowel, but *n* (in PI *-ni(ny)* and NPST *-n*) conditioning a centralisation to *v* in D and R and conditioning raising to *e* in BGW. Changes that have applied in some environments only are shown by ~.

Overall, the pattern reflects the accumulation of several spatially overlapping changes — for example, BGW, D, and R share the change apicalisation, while with regard to the development of the nasal element, BGW and D resemble Ja and W in simply losing it, whereas R now groups with Ngal in denasalising it to a stop, yielding a geminate. The changes are organised into groups, temporally ordered from left to right; a language can undergo at most one change from within the same group, since mostly these refer to logically incompatible alternatives (e.g. the nasal element can be lost entirely, lenited or denasalised, or remain unaltered). Non-empty cells represent the result of changes in the relevant column.

Table 36: Steps yielding modern GN reflexes of *]$_v$*-nyci- ~ -nhthi-*]$_v$'reciprocal'

	Initial nasal (a) lost (b) lenited to *y* (c) denasalised	Selection of (d) dental (e) palatal	Vowel centralisation */th_n* (f)	Apicalisation (g)	Lenition: (h) *j>y* Flapping: (i) *t > rr*
Ja	(a) *-thi-~ -ci-*	(e) ***-ci -***			(~h) ***-ci- ~ -yi-***
W	(a) *-thi-~ -ci-*	(e) *-ci-*			
BGW	(a) *-thi- ~ -ci-*	(d) *-thi-*	(f) ***-the- /_n,*** ***-thi- /_ny***	(g) ***-te- /_n,*** ***-ti- /_ny***	(i) ***-rre- /_n,*** ***-rri- / _ny***
D	(a) *-thi- ~ ci-*	(d) *-thi-*	(f) ***-thû- /_n,*** ***-thi- /_ny***	(g) ***-tû- /_n,*** ***-ti- /_ny***	(i) ***-rrû- / _n,*** ***-rri- / _ny***
R	(c) *-ththi-*	(d) *-ththi-*	(f) ***-ththv- /_n,*** ***-ththi- /_ny***	(g) ***-ttv- /_n,*** ***-tti- /_ny***	
Ngal	(c) *-ththi- ~ ccii-*	(e) ***-cci-***			
Ngn	(b) *-ythi- ~ -yci-*	(d) ***-ythi-***			
Nu		(e) ***-nyci-***			
M	(~a) *-(nh)thii- ~ -(ny)ci-*	(e) ***-(ny)ci-***			

3.19.2 The inchoative

Two inchoative morphemes are reconstructable for pGN. One is **-me-*, which derives ultimately from an independent verb meaning 'to do, to say' (§3.13). The other is **-thi-*, with reflexes in five languages, given in Table 37.

Table 37: GN reflexes of inchoative **-thi-*

pGN	Past Perfective **-THi-ny*	Past Imperfective **-THi-n-iny*	Non-past **-THi-n*
Ja	*-ci-ny, -yi-ny*	*-ci-nay, -yi-nay*	*-ci-n, -yi-n*
W	*-ci-ny*	*-ci-n-iny*	*-ci-n*
Ngn	*-ththi-ny*	*-ththi-ni*	
Nu	*-thi-ny*	*-thii-ni*	
M	*-cak, -yak*	*-ci-ni, -yi-ni*	*-ci-n, -yi-n*

The allomorphy is as follows: (a) in Ja *-c* is found following stops and nasals, and *-y* is found elsewhere; (b) in M *-c* is found following consonants, and *-y* is found following vowels; (c) the Nu form is extremely limited in productivity.

The forms of the TAM suffixes attaching to this inchoative are unproblematic. The M PP is not cognate and involves the *-Cak* PP suffix found elsewhere in the M verbal paradigms (Merlan 1981:155).

The relationships between the forms of the inchoative suffix itself are also comparatively uncomplicated. Ngn shows gemination, a common process at suffix boundaries in Ngn, Ngal, and R (Baker 1999). The Nu form presumably also contained a long stop historically, as **th:* > *th* is a regular shift in Nu (Heath 1978a:38). This inchoative is only marginal in Nu (Heath 1984:398), in which the principal inchoative is a reflex of **-ma*.

The Ja, M, and W forms are regular reflexes of the reconstructed form. The Ja form is identical to the Ja reciprocal/reflexive suffix, and the W form is identical to the W reciprocal suffix (§3.19.1). However, neither of these forms is a regular reflex of the reconstructed reciprocal **-nyci*. Neither Ja nor W otherwise reduces nasal–stop clusters. Consequently the loss of the initial nasal does not result from phonological processes. As such it appears that the Ja reciprocal/reflexive and the W reciprocal derive from the inchoative ultimately, and not from the reciprocal. The semantic paths underlying this extension in the range of the inchoative require further investigation.

Heath (1978a:92–93) proposes that Ngn has borrowed its inchoative from the Yolngu languages. An inchoative morpheme **-thi* can be reconstructed for Proto Yolngu. Its reflex *-thi* is present in Ritharrngu and Dhay'yi, the Yolngu languages bordering on Ngn and Nu. However, Heath (1978a:92–93) reconstructs the paradigm of this verb in Proto Yolngu as **-ththi-na, -ththi-nya* 'Past', **-ththi-rri* 'Present', **-ththi-Ø* 'Future'. The Yolngu suffixal paradigm is unrelated to the Ngn suffixal paradigm, and in comparison to the paradigms shown in Table 32, the Yolngu paradigm is not a plausible source for the Ngn inchoative. As with the 'tell off' verb discussed in §3.16, this is a case where a claimed case of diffusion turns out, on consideration of a wider range of languages, to be a matter of parallel inheritance. (This is not to say that areal factors, in particular Ngandi-Ritharrngu bilingualism, may not have played a part in keeping the same form alive in these neighbouring but not closely related languages).

4 The pGN conjugational system

We have now reconstructed the verbs and derivational verbal suffixes which are summarised in Table 38.

It will help us see the patterning more clearly if we abstract the main patterns of desinence from the above verbs. This is done in Table 39, which arranges verbs by conjugational pattern (note that this conjugation numbering is for pGN, and hence does not correspond to the BGW conjugations given in Table 2). Verbs with a 'pure' conjugation are listed in the third column, while verbs whose reconstructions show variation are shown in the fourth. Since much of this variation is explicable in terms of analogical spread of particular patterns (particularly in the PP), possible analogical sources for variant forms are listed in the rightmost column.

Table 38: Summary of reconstructed pGN verb forms

*Root	Meaning	*Past Perfective	*Past Imperfective	*Non-past	§
po-/pu-	'hit'	*pom ~ pong*	*puniny*	*pun*	2.1–3
nga-	'hear'	*ngam ~ ngang*	*nganiny*	*ngan*	3.4
na-	'see'	*nay ~ nang*	*naniny*	*nan*	3.1
tho(wi)-	'die'	*thowi-ng*	*tho(wi)niny*	*thon, thowin*	3.8
wo-	'give'	*woy (? ~wong)*	*woniny*	*won*	3.2
ngu-	'eat'	*ngong*	*nguniny*	*ngun*	3.3
ru-	'cry'	*runy*	*runiny*	*run*	3.7
]$_{adj}$-me-	'inchoative'	*-meny ~ -miny*	*-meniny*	*-men*	3.13
ra-	'spear'	*ram*	*reniny*	*ren*	3.5
wa-	'follow'	*wam*	*waniny*	*wan*	3.6
ka-	'take, carry'	*kang ~ kanginy*	*kaniny*	*kan*	3.9
tha-	'stand up'	*thanginy*	*thany*	*thangen*	3.11
yo-/yu-	'lie, sleep'	*yonginy ~ yony*	*yoy*	*yu ~ yongen*	3.10
ni-	'sit'	*ninginy*	*niny*	*ni*	3.12
thi-	'be standing'	*thi*	*thiny*	*thi*	3.11
ma-	'get'	*may*	*manginy*	*mang*	3.13
()$_{pre}$-)ma-	'thematic; do; say'	*-many*	*-marany ~ -mariny*	*-mar*	3.13
patca-	'punch'	*patci*	*patcanginy*	*patcang*	3.14
tho-	'chop, crush'	*thoy*	*thonginy*	*thong*	3.15
thu-	'tell off'	*thuny ~ thuy*	*thunginy*	*thung*	3.16
yini-	'say, do'	*yininy*	*?*	*yini*	3.17
]$_v$-yi-]$_v$	'reflexive'	*-yiny*	*-yininy*	*-yin*	3.19.1
]$_v$-nhthi- ~ nyci-]$_v$	'reciprocal'	*nhthiny ~ nyciny*	*nhthininy ~ nycininy*	*nhthin ~ nycin*	3.19.1
]$_{adj}$-thi-]$_v$	'inchoative'	*-thiny*	*-thininy*	*-thin*	3.19.2

Several general points may be made about the paradigm of reconstructed verbs.

First, in most cases the PI is based on the NPST plus **-iny*; this holds for conjugations 1–4 and 6, and for 7 with the addition of a vowel-harmonised variant **-any*. Only in the stance verbs is the PI ending added straight to the root.

Second, in most patterns the PP form is the most differentiated — for example, the NPST ending **-n* corresponds to four PP endings (**-m*, **-y*, **-ng* and **-ny*). Only in conjugations 5–7 do the NPST forms depart from the form **-n*. Note also that, leaving aside the 'variants', only for the PP forms in **-y* and **-ny* are the NPST forms not predictable, i.e. PP **-ny* can have NPST **-n* or **-r* according to the verb, and PP **-y* can have **-n* or **-ng*.

Third, most of the patterns listed in the 'variant' column can be assigned an analogic source in another pGN conjugation. This means that in fact some of these variants may be parallel analogical developments in several modern languages, rather than being attributable to pGN. Reconstructions from other language families will be particularly useful in checking how far back some of these variant reconstructions go.

Table 39: Paradigmatic patterning of reconstructed pGN verb inflections.

pGN conj. no.	Pattern summary (PP : PI : NPST)	Verbs following this pattern	Verbs following this pattern with variation	Possible analogic source for variations
1	*-m : -niny : -n*	*wa-* *ra- (-re-)*	*pu- (-po-*; PP ~*-ng*) *nga-* (PP ~*-ng*)	
2	*-y : -niny : -n*	none	*na* (PP ~*-ng*), *wo-* (PP ~ *-ng*)	Pattern 3 (and variant of 1) may be an analogic source for variant PP
3	*-ng : -niny : -n*	*tho(wi)-* *ngu-* (*-ngo-*)	*ka-* (PP ~*-nginy*)	Pattern 5 as source for variant PP
4	*-ny : -niny : -n*	*ru-* *-me* (inch) reflexive *-yi-* reciprocal *-nhthi-* inchoative *-thi-*	*yini* (NPST: ~ *-q*)	Thematic *ma-* in Ngal and R
5	*-nginy : -ny : -ngen*	*tha-*	*yo/u* (PI *-y*; NPST ~*-ø*); *ni* (NPST ø)	No obvious source
6	*-y : -nginy : -ng*	*ma-* 'get' *patca* (PP *ay >i*) *tho-* *thu-* (PP ~*-ny*)	*thu-* (PP ~*-ny*)	Pattern 4 (*ru-* also ends in *u*)
7	*-ny : -rany ~ -riny : -r*	*ma-* 'thematic; do; say'		

Fourth, a number of verbs have reconstructed vowel alternations in addition to the suffix: **pu- ~ *po-* 'hit', **ra- ~ *re-* 'spear', **ngu- ~ *ngo-* 'eat', and **me- ~ *mi-* 'inchoative'. These always involve alternations between a high or low and a mid vowel. Again, as reconstructions of other Australian families appear it will be interesting to see whether parallel vowel alternations are found and, if not, what reconstructable environments engendered these alternations.

Fifth, the stance verbs are at the same time the most distinctive and the most internally differentiated of the group. Even though they all share alternations between **CV-* and **CVng-* across the three TAM, the degree to which the **CVng-* forms appear in the NPST, and the specific form of all three values, varies across the three verbs.

Sixth, endings right across the paradigm are highly constrained phonotactically. Except for the aberrant conjugation 7, which has **-r* in the NPST, all inflected forms must end either in a vowel, in the semivowel **-y*, or in one of four nasals *(*-m, *-n, *-ng* or **-ny*). Of the modern languages, only M has departed significantly from this pattern (by denasalising nasals to stops), though R has introduced a further point of articulation for nasals (*rn*).

Overall one is struck by how conservative all the GN languages have been in preserving the overall characteristics of the paradigm. Even though the differential expansion, restriction, and reassigning of conjugational variants has proceeded to remodel each language's paradigm at the micro-level, the basic characteristics of the patterning have remained in all daughter languages.

5 Proto Gunwinyguan and Pama-Nyungan

Many of the verbs reconstructed for pGN have cognates in the PN languages; these are set out below. The cognacy between the verb roots in GN and PN is generally unproblematic, once one takes into account the absence of phonemic vowel length in GN, the presumed absence of mid vowels in pPN, and the initial laminals in PN corresponding with apicals in GN (Evans 1988) as in the 'see' and 'sit' sets. Table 40 compares the reconstructed PP and NPST forms of pGN verbs with two other forms from 'outside' Gunwinyguan: (a) the conjugation classes of what Dixon (1980:404–405) calls 'Proto Australian' and what we take to be Proto Pama-Nyungan[15] (b) Alpher's (1990) reconstructions of pPN verbs, where relevant, and (c) relevant contemporary forms from particular PN languages.

The table is divided into three groups on the basis of the type of correspondence in final inflection. In many cases the pGN PP form resembles the conjugation marker in the Pama-Nyungan languages; an interesting case is 'hit', where both alternate PP forms in pGN (i.e. final *m* and final *ng*) occur in Pama-Nyungan, in one case in the same language (Djapu, but reassigned to different TAM values). For a couple of verbs it is the pGN non-past that resembles Dixon's putative Pama-Nyungan consonant-final root: these are the GN thematic *-ma-r*, resembling Dixon's 'say, do' **mal*, GN *re-n* 'spear', resembling the base form *lan* in Walmatjarri (Richards & Hudson 1990), and possibly GN *thangen* 'stand', which may correspond to pPN **thana-* (with allowance for irregular loss of medial **ng*; and bear in mind that this element is, exceptionally, not present in the past imperfective, so the loss may have been analogically motivated). Note for *-ma-r*, though, that there are three languages which appear to have reflections of both the PP and NPST forms from pGN: cf. pGN PP **-many*, Djabugay 'make' past *many*, GY inchoative past *-ma-y*, and W1 'speak' (past irrealis) *manyjarla* (with augment), and pGN NPST **-mar*, Djabugay 'make' present *ma*, GY inchoative non-past *-ma-l*, and W1 FUT *malku* (with future augment).[16] In the case of this

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15 Compare Heath's (1990:403) observation that '[f]rom a methodologically conservative point of view, we should really take Dixon's 'Proto-Australian' reconstructions as Proto Pama-Nyungan, since the descriptive materials used are from Pama-Nyungan languages'.

16 We acknowledge there are some semantic discrepancies here, but believe each can be related plausibly to some meaning of pGN *-ma* — the inchoative in GY to its role as a general intransitive thematic, the 'speak' meaning in W1 to its meaning 'say, do' when used as a main verb, and the 'make' meaning in Djab to its meaning 'do'. In any case, the meaning attributed to this root by Dixon (1980) spans a comparable range.

verb, then, there are some PN languages preserving a situation more like that found in Gunwinyguan, in which the 'conjugation marker' has a less ubiquitous role in the paradigm, and moreover in which there appears to be direct cognacy between unrelated past and non-past suffixes.

For yet other verbs, we have been unable to find any resemblance between the putative conjugation marker in PN and the pGN suffixal form, though of course subsequent research on historical phonology may end up relating some of the final consonants involved, such as pGN **m#* and Walmatjarri **ng#*.

Table 40: Comparison of pGN forms with regard to putative final consonant and conjugation membership in other Australian languages

pGN *root	*PP	*NPST	'pA' root (Dixon 1980)	pPN (Alpher 1990)	Nearest match in contemporary PN (meanings only given if they differ from those in pGN)
Putative pA root-final consonant (Dixon 1980) corresponds most closely to PP in pGN					
po- ~ pu- 'hit'	***pom*** *~pong*	*pun*	*pum* 'hit'	**puma* (Imp)	Nya PERF *pumayi*, Banj √*pum*, Djap *puma* (unmarked), PST *pungu*; Gmb IMP *puma*, PURP *pumku*; Wlp PST *pungu*, FUT *pungku*; Yank PST *pungu*, FUT *pungkuku*
na- 'see'	*nay ~ nang*	*nan*	*NHaang* 'see'	**nyaangu* (Past)	Gmb PST *nyaawang*, IMP *nyayaga*, GY PST *nhaathi*; Wlp PST *nyangu*, FUT *nyangku*; Yank PST *nyangu*, FUT *nyangkuku*; Djap POT *nhaangu*.
wo- 'give'	*woy (?~wong)*	*won*	*wung* 'give'		GY PST *wuthi*.
nga- 'hear'	*ngam ~ ngang*	*ngan*			Gmb √ *ngarraang* PST *ngarraawang*, FUT *ngarraangku*; Djap UNM *ngaama*.
ka- 'take, carry'	*kang ~ kanginy*	*kan*	*kaang* 'carry, bring, take'		Banj √*kaang*; Wlp PST *kangu*, fut *kangku*; Djap POT *kaangu*, PERF *kaangal*, WI NPST.IRR *kangka*, customary realis *kangany*.
Putative pA root-final consonant (Dixon 1980) corresponds most closely to NPST in pGN					
(]-)*ma-* 'thematic; do; say'	*-many*	*-mar*	*mal* 'speak to, tell, do, make'	**-marra*	Banj causative *-ma*; GY INCHO NPST *-mal*, PST *-may*; Djab 'make' PST *many*, PRES *mal*; Wl 'speak' IRR *manyjarla*, PST REAL *marni(ny)*, CUSTOMARY PST *malany*, FUT *malku*.
ra- 'spear'	*ram*	*ren*			Wl √ *lan* 'to spear', e.g. *lanu*.
tha- 'stand up'	*thanginy*	*thangen*	*THa(?a)-n*	(**cana-* [root])	

Putative pA root-final consonant (Dixon 1980) corresponds to no suffixal consonant in pGN					
ni- 'sit'	*ninginy*	*ni*	*NYii-n*	(**nyiina-* [root])	Djap *nhina-ø*
ma- 'get; take'	*may*	*mang*	*maan* 'hold in hand'	**man(V)* (Past), **marra* (Imp)	GY *maa-naa* 'take, get IMP', Gmb PST *maaning*, PURP *maangu*; Wlp PST *manu*, FUT *manku*, Yank PST *manu*, FUT *mankuku*.
ru- 'cry'	*runy*	*run*	*lung* ~ *tung* ~ *yung*		Gmb PP *tuuwang*, PURP/FUT *duungu*, √*duung*, Banj √*tung*, Uradhi PST *rungkan*, PRES *rungka*.
thu- 'tell off'	*thuny* ~ *thuy*	*thung*	*ju(u)n* 'say to; scold'		Gmb √ *cuun* 'tell', Dja √ *cun* 'scold'
wa- 'follow'	*wam*	*wan*			Wl √*waang*: PST REAL *waanya*, CUSTOMARY *waangany*.

In the cases where there is a correspondence, the status to be attributed to the proto-forms of these inflections is the subject of some debate. Dixon (1980:414) argues that the distinctive consonants listed above were probably originally part of the verb root and were later reanalysed as conjugation markers. This hypothesis is criticised by Alpher (1990). He argues that positing a situation where the 'conjugation markers' were once found with all verb forms in PN requires too many irregular sound changes. As an alternative, he proposes that the 'conjugation markers' should be viewed as having originally been desinences marking particular verbal categories, which over time have been reanalysed as conjugation markers in some languages.

pPN on Alpher's view would appear to be closer to the situation found in the GN languages. While it is possible, in most of the GN languages, to describe the verb **pu* 'to hit' for example as belonging to the **-m* conjugation, this clearly cannot be taken to imply that the conjugation of **pu-* 'to hit' can be reconstructed with a marker **-m*, which is found throughout the conjugation. Rather describing **pu-* as belonging to the **-m* conjugation merely indicates the least predictable desinence from which the others may be predicted (i.e. **-m* verbs have a NPST in **-n* and a PI in **-niny*, as do **-ny* verbs). Moreover as it appears that in pGN the PI consisted of the NPST + **-i/any*, it is not difficult to conceive of changes that would cause the NPST inflections **-n*, **-ng* and **-r* to be reanalysed as conjugation markers.

Therefore the pGN conjugational system appears to provide support for an analysis of the 'conjugation markers' in PN as having been markers of verbal categories. As we have already stated, while PN verbs with **m* and **ng* in their inflectional endings show correspondences with the PP forms of pGN verbs, PN verbs marked by **-r* (and in one case **-n*) show correspondences with the NPST forms of pGN verbs. This would suggest that the PN 'conjugation markers' have origins in the markers of a variety of different verbal categories, which have then been analogically generalised and detached from any association with a particular TAM category. Further support for this model comes from the case of 'thematic; do; say' *(-)ma-*, mentioned above, for which the unrelated PP and NPST suffixes of pGN each have cognates, with matching semantics, in several PN languages.

6 Conclusion

This article is preliminary in many ways. It needs to be expanded by looking at more verbs (see §3.18), more prepound + thematic combinations, and more TAM categories (in particular, by looking at the cognates of the irrealis category discussed in §1.3); by more consideration of the evidence of external cognates; and by a more rigorous understanding of GN historical phonology. It would also be helpful to have reconstructions of other subgroups, rather than just modern forms, as a reference point for comparisons. These advances will give us a more detailed picture, identify some archaisms we may have overlooked, and correct some of our reconstructions, and may make it possible to eliminate some of the variants which it has been impossible to decide between at this level of knowledge. Nonetheless, our morphological reconstructions, like all such, will never attain total precision, owing to the many degrees of freedom given by the interaction of regular sound change, irregular sound changes affecting prosodically weakened final elements, and the operation of analogy.

Despite the many doubtful points in our reconstruction, we have shown that it is possible to reconstruct the complex proto-system of the GN family in some detail. It is reassuring how much irregularity this reconstructed system contains, since it is paradigmatic irregularities that provide the most distinctive signatures in morphological comparison.

Although there are many similarities to how the pPN system would have looked, there are important differences. In the GN languages it is difficult to talk of 'conjugation markers' in the sense the Dixon uses the term, and this raises the question of how they emerged in PN. The view advanced here is that they emerged, probably concurrently with the emergence of PN as a subgroup, by a process of analogical extension of unpredictable consonant endings which originally would have been, as in the GN languages, scattered across the various TAM inflections (sometimes in the PP, sometimes in the NPST) rather than regularly present before the TAM exponent as in the putative pA consonant-final roots of Dixon. A second important difference is that the PP vs PI contrast that pervades the GN languages, while widespread in Pama-Nyungan languages, is not necessarily to be reconstructed for PN, and conversely various PN categories, such as the imperative and purposive, are not a normal feature of GN. The historical relationship between these two types of system, the determination of which categories are innovative in each family, and their diachronic source, now emerges as an important question for future research. Until it is resolved it is premature to talk of 'Proto Australian' verbal endings, since it is by no means clear at this stage which system is more representative, and indeed comparable work with other nonPN families seems bound to throw up further systems which must eventually be integrated into a unified diachronic account.

In the meantime, an important side-effect of the current article is to cast doubt on some prior claims about diffusion of morphology across the PN-nonPN boundary in Arnhem Land. Two morphemes — thematic *-thu* and inchoative *-thi* — which Heath (1978a) claimed had been diffused into Ngn from Ritharrngu — turn out to be cases of parallel inheritance.

Apart from further work on GN verb inflections, then, the next step of research that we need is comparably detailed reconstructions for other subgroups (including PN!). Only when this has been undertaken will we be able to get much further in determining the relationships of higher-level groupings in Australia, let alone say anything about 'Proto Australian'.

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12 *The genetic position of Mangarrayi: evidence from nominal prefixation*

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1 Introduction

This paper is an exploration of the genetic (and/or other) relation of Mangarrayi (M), a language of the Western Roper in the Northern Territory, to other languages in the region.

The affiliation of Mangarrayi has been uncertain. It was earlier classified as an isolate, a family by itself ('Mangaraian', by O'Grady et al. 1966:74). As far as genetic relationship is concerned, two obvious alternative possibilities suggest themselves. Mangarrayi might, on the basis of geographical proximity and also shared morphological material in particular categories, be regarded as part of a Gunwinyguan grouping, to which many languages to the north (and post-contact, also directly east) of Mangarrayi undoubtedly belong, including (without regard here to subgrouping) Kunwinjku and its closely related dialects, Dalabon (Ngalkbon), Jawoyn, Warray, Ngalakan, Ngandi, Rembarrnga, Nunggubuyu, and Anindilyakwa, among others.

But, secondly, it has been informally debated among linguists working on languages of the area whether Mangarrayi might belong to 'Marra-Alawic' (which was regarded by O'Grady et al. (1966:73–74) as comprising the three languages Marra, Alawa (Al) and Warndarrang). So far no specific arguments concerning Mangarrayi's genetic position have been published. In this paper I argue that comparative evidence and reconstruction from nominal prefixal paradigms of the languages of this proposed grouping support Mangarrayi's position within Marra-Alawic. I consider this evidence strong, for reasons to be discussed in conclusion.

It is presently not clear, however, whether all morphological reconstruction will point in the same direction. Alpher, Evans and Harvey (this volume) consider comparative aspects of verbal suffixation in a range of languages which clearly appear to belong to Gunwinyguan (although internal subgrouping has not as yet been definitively argued or determined). They show that the Mangarrayi verbal suffixal system shares a great deal of morphological material with these languages, and also some features of verbal categorial structure. These include a thorough-going distinction within the Past category between Perfective and Imperfective (or Punctual and Continuous) forms (a distinction which, however, is also

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thorough-going in Marra-Alawic), and the building of Past Negative upon the Irrealis stem-form. Although the sharing of morphological material and the categorial correspondences are suggestive of perhaps strong Gunwinyguan influence upon Mangarrayi (speakers of the latter language have certainly been in long-term contact with speakers of Dalabon, Ngalakan, and Jawoyn, although the time-depths are unproven), many aspects of verbal comparison, both in terms of formal material and categorial structure, remain to be tested and seem less strongly indicative of Gunwinyguan affiliation of Mangarrayi. I present some discussion of these matters in §6.

In any case, the generally contrasting indications as to Mangarrayi's affiliation that arise from examination of the pronominal prefixal paradigms, versus the verbal paradigmatic material considered by Alpher, Evans and Harvey, suggest that we all need to keep in mind an overarching question: are certain sorts of evidence more probative of genetic versus other kinds of relationship, and why do we think so?

2 Gunwinyguan and Mara-Alawic: alternatives

The first thing that must be clarified is why, as far as the nominal prefix system goes, it has seemed most profitable and most clearly indicated to look to Marra-Alawic instead of to Gunwinyguan to establish proximate proto-levels from which modern Mangarrayi can plausibly be shown to have developed.

Within many of the Gunwinyguan languages, we find a recurrent set of four noun class/gender prefixes, which may be schematically represented:

na-	I masculine (higher animate)
(ng)al-	II feminine (sometimes more inclusive)
(ng)an- ~ *man-*	III vegetable
kun-	IV neuter IV

Class III is realised in western languages (Warray, Jawoyn, and the Gundjeihmi dialect of Bininj Gun-Wok (BGW), see Evans 2003) by *(ng)an-*, and in eastern languages (e.g. Gunbarlang, Ngandi) by *man-*. There are some dialects of BGW that have both *ngan-* and *man-* differentially distributed over nominal and demonstrative forms, and thus realise all four of the above categories.

Some Gunwinyguan languages have a reduced but obviously cognate set of the above four gender markers. Most, like Jawoyn and Kunwinjku, distinguish masculine and feminine, characterised in all of them by invariant prefix forms *na-* and *ngal-*. (Other languages such as Dalabon have these prefix forms, but not as part of a through-going noun classification system in the contemporary language; here, as in Rembarrnga, the subcategorisation of nouns is mainly suffixal, undoubtedly reflecting loss and reorganisation in the gender/class system). Jawoyn has a *ngan-* class prefix (which mainly occurs with body parts, geographic and topographic nouns and other part–whole terms, and also has some some secondary, fully adverbial, as well as adverbialising functions). In Jawoyn, the *na-* and *ngan-* markers have been extended beyond any narrowly defined semantic range as agreement markers, while *ngal-* has remained semantically specialised as both gender/class and agreement marker. In Jawoyn, class IV does not occur as a gender class; instead, many nouns are formally *Ø-* class. Thus Jawoyn has class/gender markers *na-*, *ngal-*, *(ng)an-*, *Ø-*. Jawoyn does have an instrumental prefix *gun-*, which occurs with nouns of *Ø-* and *ngan-* classes; but its use is to

some extent facultative. Presumably this *gun-* is a reflex of an earlier prefixal alternation in certain limited contexts between e.g. **gu-* and **gun-* of class IV (and other prefixes of shapes **CV-* versus **CV-n-*). The *gun-* form has been retained in Jawoyn, not as class prefix but as a relatively weak, i.e. often omitted, marker of instrumental function, in which only non-human and inanimate nouns may occur. Synchronically the nominal prefix paradigms generally in Gunwinyguan are invariant and do not have distinct case forms, except for some systemically minor (and hence historically, potentially highly indicative) alternations between *gu-* in locative function versus *gun-* elsewhere in Kunwinjku (see Evans 2003:234–235) for some examples). Instead, case relations are principally marked in the cross-referencing prefix complex on the verb, and/or (less systematically) by case suffixes on the noun.

Jawoyn, like Kunwinjku, has no overt case suffixes marking nouns in the major clause functions transitive subject and object, and intransitive subject. (For minor exceptions, note that e.g. in Kunwinjku, otherwise ablative *-be(h)* may be used to mark the body part, when instrumental, of transitive subjects, and in some dialects, occurs as ergative marker on intransitive subjects; see Evans (2003:210–211), also Carroll (1976:101) for the form *-bewi*). There are some better-developed ergative markers in other Gunwinyguan languages, e.g. Ngandi has ergative suffix *-thu*, and Ngalakan, Rembarrnga, Kune and Dalabon *-yi'* (forms of the latter widely occur as instrumental marker in Gunwinyguan). To the north and north-east of Mangarrayi are some Gunwinyguan languages which arguably form a closer subgrouping, including Ngandi, Ngalakan, Nunggubuyu, perhaps also Anindilyakwa. Of these, Ngandi has invariant nominal prefixes of the (singular) classes *ni-*, *na-*, *a-*, *gu-* and *ma-*, and thus we may say of those forms that seem likely cognate reflexes of the some of the prefixes discussed above (e.g. *gu-*, *ma-*) that **CV-* (rather than **CVn-*) has been generalised here. In Ngalakan, there are four noun classes, and two of them, the non-human and mainly inanimate *gu-* and *mu-* classes, show alternations *CV-n-gu-* versus *Cu-*, the latter more common with Ergative case-suffixed nouns, the former with nouns in absolutive case functions (see Merlan 1983:37–38); but the functional distribution is not neat.

A noticeable characteristic of the Gunwinyguan languages briefly discussed above is the low level of case-linked alternation in existing nominal prefix forms, the little there is occurring in the paradigms of non-human nouns, and taking the general form of an opposition *CV-n-* (or augmented *CV-n-gu-*) versus *CV-*. In strong contrast with this, we find that most of the putative Marra-Alawic languages show considerable case-linked alternation in their nominal (and demonstrative) prefixes, and among themselves in systemically rather similar terms, involving noun classes, membership of at least two of which includes principally human and higher animate (rather than neuter and inanimate) nouns. This suggests that reconstruction among them will yield a far more significant set of proto-possibilities in nominal prefixation than will direct comparison of any of them with the Gunwinyguan languages. Whether this is so can only be confirmed or disconfirmed on the basis of an attempt at comparison here. There are, however, some initial questions of systemic comparability among the Marra-Alawic languages, having to do with the distribution of pre-nominal case forms over major clausal functions, consideration of which gives some insight into systemic organisation and change. Simply put, when these initial issues are considered comparatively, an earlier Mangarrayi prefix system similar to the ones in Alawa and Marra shines through.

3 Pre-nominal prefixes in Mara-Alawic: functional and formal equivalences

The only putative Marra-Alawic language which does not have case-linked prefixal alternate forms is Warndarrang. I have not undertaken any detailed consideration of this language or its conventional assignment to Marra-Alawic, and so we will only briefly summarise the situation there. The full set of invariant prefix forms is given in Table 1. Heath (1978, 1980) has suggested that the three nonhuman noun class prefixes, *(r)a-*, *wu-*, and *ma-*, are most likely diffused from (Gunwinyguan) languages to the north. Pre-demonstrative FemSg *nga-* can be shown to be relatable to forms in other Marra-Alawic languages, and it will be suggested that pre-nominal FemSg *ngi-* may be relatable at a proto-level to a pre-demonstrative prefix form of which reflexes exist in Alawa and Marra. Equally, MascSg *na-* is found elsewhere, in the Marra-Alawic languages and more widely. Except for a return to consideration of *ngi-*, Warndarrang will not figure in the rest of this discussion. Heath assumes, but does not argue the case, that the (non-alternating) non-human class prefixes originate from neighbouring Gunwinyguan languages. I assume that there may have been some redistribution of gender-marking prefixal forms as between nominal and demonstrative paradigms. We will move on to consider the situation of case-linked nominal prefix forms in Mangarrayi, Alawa and Marra.

Table 1: Warndarrang prefixes (Heath 1980)

	MascSg	FemSg	Du	Pauc	Pl	A	WU	MA
with nouns	*na-*	*ngi-*	*yirri-*	*yili-*	*wulu-*	*(r)a-*	*wu-*	*ma-*
with demonstratives	*na-*	*nga-*	*wurru-*	*wulu-*		*(r)a-*	*wu-*	*ma-*

Singular noun class/case-marking prefix forms for the three languages are set out in Table 2. All of them have three singular classes, which for convenience (and without seriously distorting the picture of class content for any of the languages) are commonly labeled MascSg, FemSg and Neut(er). However, it is difficult to neatly arrange nominal prefixes for all three languages in the same table, for Marra and Alawa differ from Mangarrayi in the organisation of case functions. In both Marra and Alawa, nouns in major clause functions (i.e. those that are cross-referenced by pronominal prefixation on the verb) pattern Ergative–Absolutively. In Mangarrayi, only Neut nouns pattern in this way; MascSg and FemSg pattern Nominative–Accusatively (*na-* versus *Ø-* for MascSg, and *ngarla-* versus *ngan-* for FemSg). Hence the clutter of alternative labelling in the M portion of the Table 2.

Table 2: Singular case/noun class portmanteau prefix forms in Marra, Mangarrayi, and Alawa

	Marra		Mangarrayi		Alawa	
	Abs	Obl	Acc	Nom	Abs	Obl
MascSg	*Ø-*	*na-*	*Ø-*	*na-*	*na-*	*a-*
FemSg	*n-*	*ya-*	*ngan-*	*ngarla-*	*an-*	*arr-*
				ngaya- (Obl)	*an-ga-*	*arr-ga*
					an-g-	*arr-g-*
Neut	*n-*	*nya-*	*Ø-* (Abs)	*na-* (Obl)	*Ø-*	*Ø-*

It is important to explain why, for all the noun classes which pattern Ergative–Absolutively in all the languages, the general labels Abs(olutive) and Obl(ique) are adopted. From Marra and Alawa, where Ergative–Absolutive is the syntactic patterning for all noun classes (in fact, also for inflecting demonstratives as well, but not for free pronouns, see Sharpe (1972:57) and Heath (1981:130ff.) for the latter), we find that all cases implemented with non-zero suffix on the noun require the prefix form which otherwise occurs in transitive subject function. That is, the Ergative prefix is, in Kuryłowicz's (1966) terms, the *forme de fondation*, or paradigmatic basis, for all non-zero case categories. Thus, alternation in the prefixal system is fundamental to the system of case marking as a whole. So, for example, in Alawa, the FemSg noun 'woman' has Erg case form *arr-girriya* (*arr-* prefix, *-Ø* suffix) versus Abs *an-girriya*; but Locative and Genitive require the same prefix form as Erg., viz., *arr-girriy-irr* Loc and *arr-girriya-yi* Gen. (See Sharpe (1972:62) for the suffixal case categories in Alawa, Heath (1981:79) for them in Marra.) The label 'Obl(ique)' is used to highlight the more general paradigmatic role of the case category, the major syntactic function of which is to mark transitive subject nouns.

The different patterning in Marra-Alawa as opposed to Mangarrayi poses a question of the comparability of prefixal case categories for purposes of reconstruction. In Mangarrayi, the FemSg prefix required by all case categories realised with non-zero suffix is *ngaya-*, and for this reason it, too, is labeled 'Obl(ique)' in Table 2. That is, *ngaya-* is distributionally comparable to Al *arr-* and *ya-* as the *forme de fondation* for all non-zero case categories, and as well for the Dative, which only for feminine nouns is marked solely by prefix, and not with the suffix usual for the other noun classes, *-wu/-gu*. But M *ngaya-*, unlike the prefix forms which occur on nouns in transitive subject function in Marra and Alawa, does not occur on transitive subject nouns. On the other hand, M FemSg Accusative *ngan-* is clearly to be related to Al *an-* etc. and to Marra *n-* etc. via an earlier **ngan-*. In Al there has been loss of initial velar nasal, but in Marra of the following vowel as well.

The centrality of *ngaya-* in the M feminine paradigm suggests that earlier overall patterning in the M FemSg category was on an Abs–Obl basis, as for the other languages, but that there has been functional innovation of a FemSg form *ngarla-* which has been part of a general process of shift in patterning in the feminine noun class to a Nom–Acc distribution. That is, *ngarla-* has replaced *ngaya-* in transitive subject function, but also intransitive subject has come to be marked by the same form. With the ousting of *ngaya-* from its earlier primary function, namely the marking of feminine nouns as transitive subjects, this prefix is continued in its earlier secondary, morphologically founded functions.

We may propose that functional redistribution and change in prefixal form has occurred in the M MascSg category to yield the modern situation, although overall evidence from the three languages suggests that MascSg nominal prefix forms in Abs and Obl functions may not have been distinct at the proto-level which should be posited to account for all of them. Marra has *na-* in the MascSg Oblique, and Al *a-*, for both of which we may probably reconstruct **na-*, with subsequent loss of initial nasal in Al. Al has *na-* in Abs function. This, together with the fact that *na-* occurs everywhere in Marra (in both Abs and Obl) as pre-demonstrative prefix suggests that **na-* may be reconstructed in both functions. For M MascSg nouns, besides being regular in transitive and intransitive subject functions, *na-* occurs in some but not all case categories with non-zero suffix: it occurs in Genitive/Dative and Locative, but not in Allative and Ablative. Thus its distribution does differ somewhat from that of *ngaya-* in its secondary functions, suggesting that while *na-* as MascSg subject

form is historically comparable to the Oblique MascSg prefixes of Marra and Al, it may also be directly comparable to non-zero Absolutive *na-* in Alawa. In M, as is the case for feminine nouns, MascSg prefix forms now pattern Nominative–Accusatively, and if our proposed reconstruction of *na-* pre-nominally in Proto Marra-M-Al in both Abs and Obl is entertained, this would mean that a pattern shift to a Nom–Acc opposition here in M has been implemented with the ousting of Absolutive **na-* from transitive object function, an occurrence likely to have been concomitant with changes in the M Neut category (see below).

Although I will not take up the pre-demonstrative prefixes in great detail in this paper, it should be noted that Al, M as well as Warndarrang provide some direct evidence of what were likely some pre-demonstrative forms in Masc and Fem categories, distinct from pre-nominal ones. M has a MascSg pre-demonstrative *ni-* in direct object form of a non-distant deictic *ni-nggi*; but also the same prefix in both Nom and Acc forms of the MascSg distant ('that') demonstrative, *ni-na* and *ni-nggi-na* respectively. Al is interesting in this regard: in Table 3 are reproduced the forms of what Sharpe calls 'demonstratives not inflected for case'. In the MascSg *nida* 'this' we see a reflex of **ni-*, and in the feminine form *anngida* 'this' an apparent FemSg element *-ngi-*, preceded perhaps by a reflex of the Abs pre-nominal prefix **ngan-*. In the 'that' forms note MascSg *nurlu*, the MascSg element evidently to be analysed historically as *na-*, the FemSg as **nga-* which has been truncated to *a-* through initial loss of velar nasal, typical of Al. (See also Al 'indirect' 3MascSg form *ni-pa* in Table 9, part of a series discussed below). In Marra, in demonstrative pronouns we have oppositions in MascSg of *ni-* Abs, vs *na-* Obl; and in FemSg of *ngi-* Abs vs *ya-* Obl. Whatever we may suppose to have been their distribution with respect to case and possibly deictic category at a posited proto-level, we here have reflexes of pre-demonstrative MascSg alternants *na-* and *ni-*, and FemSg *nga-* and *ngi-*. The latter we may suppose to be reflected also in Warndarrang case-invariant FemSg pre-nominal prefix *ngi-*. However, while in Warndarrang the pre-demonstrative FemSg is *nga-*, both M and Al, and parts of the Marra pre-demonstrative system, suggest that forms with *i* vocalism were characteristic of pre-demonstrative prefixes. Available evidence thus suggests redistribution in Warndarrang.

Table 3: Alawa demonstratives not inflected for case (Sharpe 1972:66)

	MSg	FSg	Pl	Du
'this'	*nida*	*anngida*	*yilarrnyida*	*yirrarrnyida*
'that'	*nurlu*	*adurlu*	*yilurlu**	*yirrurlu**

*V in first syllable is often *u*

A few comments are now in order on the Neut prefix forms among the three languages. Al Neut category has Ø- in both Abs and Obl functions. Marra has Obl *nya-*, and this seems to be the best candidate for reconstruction in this category. The Marra neuter Abs, on the other hand, has become identical with FemSg Abs, possibly by a process which has truncated an earlier non-zero Neut Abs form **CV-n-*. M Neut Obl/Erg *na-* suggests that whatever earlier form there may have been in this function, it has been renewed by functional spread from the MascSg (and Marra, too, has specialised *na-* as an ergative-instrumental prefix (see Heath 1978:76). In partial parallel, recall from above that Jawoyn retains the Proto Gunwinyguan class/gender prefix IV **kun-* only as instrumental marker). We must conclude that M does not provide direct evidence of the form of earlier non-zero Neut prefixes, while

Marra clearly does. There is also arguably a now isolated reflex of Neut *nya-* in Al, in the paradigm of an adjectival form which means 'different'. This has a segmentable stem *-kul-*, preceded by *nya-*; case forms are *nyakul, nyakulyi, nyakultuyunu* (Nom, Gen, Elative, Sharpe 1972:66). Segmentation of the stem is rather clearly suggested by a contrast with a second lexeme which Sharpe glosses 'another', and which has case-forms *nakul, nakultya, nakultu, nakultuwur* (Nom, Gen, Op(erative), All(ative), El(ative)). In other words, the semantic distinction between the two series is linked to differences in the (now lexicalised) prefix, and *nya-* seems a likely reflex of the NeSg pre-nominal prefix.

We may now summarise in Table 4 the proposed equivalences among prefix forms for singular nouns. While reconstruction of FemSgAbs **ngan-* is unproblematic, for the NeObl we can only propose *nya-*, and for NeAbs *nya-n-*, based on the Marra and slender Al evidence. In the FemSgObl, Marra *ya-* and M *ngaya-* match nicely, especially given the fact that loss of initial *nga-* is attested also in the Marra FemSgAbs *n-*, and these two together suggest that the shape of the prefix reconstructed in this category should be **ngaCa.* This would involve positing that besides well-attested loss of initial nasal in Al, there has also been apocope of the second vowel, yielding modern *arr-*. More problematic is the question what should be reconstructed as the second C, and I incline to think **ngarra-* is somewhat more plausible than **ngaya-*, with a shift to *y* posited for Marra and M. Formal and functional categories comparable in the modern languages are set out in Table 4. Reconstructed categories are summarised in the bottom row, amounting to the positing of a Proto Marra-M-Al level at which the organisation of nominal case marking was on an Abs-Obl basis.

Table 4: Equivalences among prefixal case forms and functions for singular nouns

	MascSg Abs	MascSg Obl	FemSg Abs	FemSg Obl	Neut Abs	Neut Obl
Marra	*Ø-*	*na-*	*n-, n-nga-*	*ya-*	*n-, n-nga-*	*nya-*
M	*(na-)*	*na-*	*ngan-*	*ngaya-*	*Ø-*	*na-*
Al	*na-*	*a-*	*an-*	*arr-*	*Ø-*	*Ø-* (plus relic *nya-*)
proto	**na-*	**na-*	**ngan-*	**ngarra-*	**nya-n-*	**nya-*

3 The comparative distribution of *-rla*

An important outstanding question is that of the posited innovation of *ngarla-* as FemSg Nom pre-nominal prefix in M, and the proto-level to which it may be assigned, at least relative to other events. Recall the distributional evidence suggests that *ngaya-* was the earlier Proto M. transitive subject form, opposed to Abs *ngan-*; and that *ngarla-* ousted *ngaya-* from its primary function. What are the possible sources of the innovated form *ngarla-*, and in particular, of *-rla*? Both M and Al have some material which needs to be considered in discussion of this question; some of the following points will be brought up for purposes of completeness, only to be dismissed as not immediately relevant to the issue. I will show, however, that there are clear reflexes of a functionally relevant *-rla* in both M and Al, which seems to have been continued in Al in third person free forms (Sharpe (1972) calls these, as well as first and second person forms, 'pronouns'); and it seems, on present evidence, that this was the original morpho-syntactic environment in which *-*rla* occurred.

The contrast in M between prefix forms *ngaya-* and *ngarla-* suggests, at least initially, that we ought to examine any phonological alternation between *y* and *rl*, in order to establish a model for relating the forms to each other. There are two environments in M in which *y* alternates with *rl*. The first of these is the alternation in certain verb stems of Present tense shape *Caya-* with stem forms *CarlV(C)* in past tenses (e.g., *daya* 'bite', Pres; *darli*, Past Continuous; *darlag*, Past Punctual; see Merlan 1982:151). We will not consider this further, as it does not seem on either categorial or functional grounds to be related to the issue at hand.

The second environment in which we find *y* /*rl* alternations seems, at first glance, more relevant; and it will clearly be important to further development of reconstruction in the area of combined number and case marking. For present purposes, a brief summary will suffice.

M, unlike the other languages, has elaborated suffixal non-singular number marking on the noun (Merlan 1982:89), and on pronouns (1982:102), and in a few other areas of its nominal morphology, in which a plural marker *-rla* (which very systematically contrasts with dual elements of forms *-rr-*, *-rra-* etc.) contrasts as Nominative with other case-linked forms. Thus, case marking of the explicitly number-marked noun, as well as the pronouns, is expressed by an elaborated suffixal system, organised on a Nominative-Accusative basis. The nominal plural marker is *-yarla* ~ *-garla* (the *ya~ga* quite clearly a phonologically motivated augment; see Merlan 1982:87). Its Nominative case form contrasts with Accusative *-ya-yanngan*/*-ga-yanngan*, which may be segmented *-ya-ya-n-ngan*, i.e. phonological augment plus *-ya-* Acc. case form of the number marker, plus Acc-marking *-n-*, plus another apparent Accusative, non-singular number-marking element *-ngan*. Here, then, Nominative *rl* alternates with Accusative *y*. See in Table 5 an example plural noun paradigm, and sample 2Pl pronoun paradigm. These show the Nominative suffix form to be paradigmatically basic in the noun, as it is the form upon which all other cases except Acc are built; but Dative (in plural forms, with characteristic internal segment *-rnya-*) to be foundational in the pronominal paradigms.

Table 5: Example of Mangarrayi plural noun and pronoun paradigms

	Noun (MascSg *na-malam* 'man, person')	Pronoun (2Pl, *nurla*)	
Nom	*(na-)malam-garla*	*nu-rla*	
Acc	*malam-gayanngan*	*nu-ya-n-ngan*	
Gen/Dat	*(na-)malam-garla-wu*	*nu-rnya*	(Dat/Purp)
		nu-rnyang-gu	(Gen)
Loc	*(na-)malam-garla-yan*	*nu-rnyang-gu-yan*	
All	*malam-garla-rlama*	*nu-rnyang-gu-rlama*	
Abl	*malam-garla-wana*	*nu-rnyang-gu-wana*	
	(Merlan1982:89)	(Merlan1982:102)	

The functional match between *y* of the plural Acc marker *-ya-*(*n-* etc.) and the *y* of pre-nominal *ngaya-* is not a good one, and it is in fact not to be suggested that these forms are relatable to each other. Rather, recall that we have found satisfactory comparability on both formal and functional grounds of M *ngaya-* with Marra FemSg Obl *ya-*. We have also established that in M a portmanteau suffixal element *-rla* which marks plural number and

Nominative case has an Accusative case form *-ya-n-* etc. The question is, then, what elements elsewhere may be established as directly comparable with this *-rla*?

Table 6: Marra number oppositions in non-singular pronouns

	pre-nominal		pre-demonstrative	
	Abs	Obl	Abs	Obl
Du	*wurr-*	*wirri-*	*warr-*	*wirri-*
Pl	*wul-*	*wili-*	*wal-*	*wili-*

Table 7: Alawa number oppositions in non-singular pronouns (Sharpe 1972:57, 60)

	1 Incl.	2	3	nominal prefix
Du	*ngarru*	*wurru*	*yirru-rla*	*yirr-*
Pl	*ngalu*	*wulu*	*yilu-rla*	*yil-*

Table 8: Mangarrayi number oppositions in non-singular pronouns Note plural *-rla* versus other languages' *-lu*.

	1 Excl.	1 Trial	2
Du	*ngi-rr*	*nga-rr*	*nu-rr*
Pl	*ngi-rla*	*nga-rla* (1 Incl.)	*nu-rla*

Since the element marks both plurality and Nom case, we might look to the number-marking elements in the other languages. But examination quickly reveals two things. First, most of the languages show a thorough-going distinction in a number of systems between plural number marked by *-lV-* versus dual number marked by *-rr(V-)*, so much so that this distinction may be easily posited for Proto Marra-M-Al-Warndarrang in some of these systems (see Tables 6 and 7 for some examples, also Table 1 for Warndarrang). But secondly, the *-rla* Nom/plural number marker in M is not to be equated with plural *-lV-*, on phonological and other grounds. (See Table 8, where contemporary M Pl/Du contrast is between *-rla* and *-rr* in non-singular pronouns; plurality in the corresponding pronouns of other languages is marked, for example, by Al *-lu*).

Clearly, any match between M *-rla* and *-lV-* as plural marker in the other languages is to be rejected because the M element has initial retroflex liquid, while the other languages have non-retroflexed articulation in plural elements. (For the same reason, M pre-nominal FemSg *ngarla-* is not aptly compared with FemSg pre-nominal *ngal-*, briefly mentioned early in this paper as occurring in some Gunwinyguan languages). What we must suppose instead is that in their plural forms M pronouns have been reshaped, and an earlier Pl *-lV* versus Du *-rr* number opposition has been restructured as one between *-rla* which synthetically marks both number and Nom case, versus *-rr* which is the Du Nominative form. (M Nom Du *-rr* has Acc case form *-rra-*, as in the pair 1ExDu Nom *ngi-rr*, versus 1ExDu Acc *ngi-rra-ngan*, with additional non-singular Acc-marking element *-ngan*). And the fact that the plural Nom number-marking suffixal element in the noun is the same *-rla* as is found in the pronouns may be understood in terms of the fact that those nouns which are number-marked (for either

dual or plural) are typically human or higher animate, and/or referentially specific (see Merlan 1982:87).

Having established quite clearly that we may not relate M *-rla* to forms of plural number markers found in all the other Marra-Alawic languages, we may now suggest what it is comparable to. In Al, Sharpe describes an opposition within the free pronouns that she calls 'direct' versus 'indirect'. The 'direct' forms are used for subjects of equational and verbal clauses, 'and in verbal clauses also for any other noun phrase with which the verb agrees in person and number. It is also used whenever a pronoun is placed at the beginning of a clause or phrase for emphasis' (Sharpe 1972:57). Sharpe adds that the function of the direct pronouns is usually to render emphasis (as in *ngina ng-arla* 'I [*ngina*] am going'). The 'direct' pronouns like *ngina* cannot be considered to coincide entirely or simply with transitive and intransitive subject clause functions, as some of Sharpe's (1972:58, see also Sharpe 1976) examples clearly show, for one finds such pairs as illustrated in (1a and b), where both free pronouns 3SgM *nurla* and 1Sg *ngina* are of the 'direct' series.

(1) after Sharpe (1972:58)

a. *Nurla yang karr-ngatan-na.*
he-DIR hit I-did-him
'I hit him.'

b. *Ngina yang karr-ngatan-na.*
I-DIR hit I-did-him
'I hit him.'

The 'indirect' pronouns, on the other hand, are used 'for other nuclear noun phrases, for possession, both alienable and inalienable, and whenever the genitive case of the substantive would be used (i.e. for purpose or beneficiary). In verbal clauses, therefore, the direct pronoun is always used for the subject of the verb, but is only used for a referent [i.e. oblique adjunct, FM] when the verb is direferential (DR) and has an agreeing affix (or for emphasis as stated above)' (Sharpe 1972:58). See also Heath (1981:130ff.). on the Marra pronouns, which as in Al exhibit different case organisation from the Erg-Abs patterning of nouns and demonstrative pronouns. (Morphologically, the Marra pronouns exhibit a three-tiered system, with a Nom stem form, a Gen stem form on which Ablative is built, and an 'Oblique' stem form on which Allative, Locative and Purposive are founded).

Thus, we can see that the uses of the Al 'direct' series comprehends transitive and intransitive subject functions, though it may also be used for nouns in other functions which are cross-referenced on the verb, and/or for 'emphasis'; while the 'indirect' series might be glossed essentially Dative-Objective (and secondarily, 'non-emphatic').

We note that third person 'direct' forms have a final element *-rla* (see Table 8; it is very likely etymologically the same element which occurs in 'that' forms of 'demonstratives not inflected for case' — refer to Table 3). This *-rla* contrasts, as Table 8 also shows, with 'indirect' element *-nga* which, we may note, unlike *-rla*, only occurs in non-singular forms. I think it may be reasonably concluded that this *-rla* in Al is a reflex of an element **-rla* which in M renews pre-nominal FemSg prefix as transitive/intransitive subject function–marking *ngarla-*. It may also be concluded that *-rla* of the Nom. plural number marker (*-ya-rla/-ga-rla* etc., as above), is to be regarded as yet another reflex of this same element, now obviously functionally differentiated within contemporary M. But these conclusions need to be argued. What is it necessary to posit in order to equate Al 'direct' *-rla* with the element *-rla-* in the remodelled M FemSg pre-nominal *nga-rla-*, and with the plural Nom number-marking element?

Table 9: Alawa direct and indirect pronouns, third person forms (after Sharpe 1972:57; segmentation added)

	Direct	Indirect
3MascSg	*nu-rla*	*ni-pa*
3FemSg	*nga-du-rla*	*nga-tu*
3Du	*yi-rru-rla*	*yi-rru-nga*
3Pl	*yi-lu-rla*	*yi-lu-nga*

First, it is necessary to posit an historical situation in which **-rla* could occur with both singular and non-singular third person forms, and we have warrant for doing so on the basis of its distribution in Al over singular, dual and plural number forms. Second, it is necessary to suppose a primary functional identification of this element with non-objective case functions, and here again the distribution in Al, though not entirely straightforward as explained and illustrated above, nevertheless provides clear warrant for doing so. In as much as it is opposed in Al to the 'indirect' non-singular element *-nga*, we find also in the latter a promising element to be compared functionally and perhaps etymologically with M Acc plural element *-ya-*, or possibly also, with the additional Acc non-singular element *-ngan* (though the latter seems to me at that stage less likely to be directly comparable). The Al oppositions in the pronoun, 'direct' *-rla* versus non-singular 'indirect' *-nga*, at least permit us to see that although combined number-and-case marking is elaborated more in M as a suffixal system than in the other languages, there are historically comparable materials elsewhere in Marra-Alawic.

We may posit that the M reflex comparable to Al's 'direct' *-rla* underwent functional differentiation, becoming number-specialised in its function as plural (Nom) marker in the M nominal and pronoun systems. A concomitant of this was the ousting of former plural number marking (by *-lV*) from those pronouns. That is, an earlier opposition between 1ExDuNom *ngi-rr* and 1ExPlNom (functionally 'direct' form) **ngi-la-rla* is simplified to one between *ngi-rr* and *ngi-rla*. The element *-rla* comes to mark plural number and Nom case fusionally, and we may also hypothesise concomitant development of full paradigmatic suffixally marked case oppositions in the pronouns, from some kind of rather less elaborated number/case system such as is attested in modern Al's 'direct'/'indirect' opposition (and with some greater degree of complication, also in Marra). This leads to a wider distribution of this element in M compared to Al, i.e. over non-third categories in the plural personal pronouns; the widening in terms of co-occurrence with person categories is consistent with its number specialisation in this language. Also, as observed above, we may posit clear formal/functional linkage between pronominal and nominal number in M, where in the latter system only human/higher animate nouns and/or nouns with referents which are specific are marked for non-singular number (and in regard to this, there would seem to be considerable coincidence between the nominal specifications human/higher animate and the textual specification, referentially specific).

But besides becoming number-specialised in M's nominal and pronominal system, we have posited that another functional specialisation of *-rla* was its recombination with FemSg pre-nominal element *nga-* to innovate pre-nominal FSG Nom *nga-rla-*; and this specialisation now seems quite dissociated historically from its spread into the suffixal number system. In

positing this second specialisation I assume that the element primarily functioned approximately as what Sharpe (1972) called a 'direct' (third person) element. And in fact it may be supposed that it was partly through this formal innovation, and the institution of an opposition with FemSg (now Acc) *ngan-*, that the functional shift from Erg-Abs towards a Nom-Acc distribution in the human noun classes (for which there was support in the non-singular nominal case/number system) was given impetus. (It seems evident that this was the direction of change in this feminine category, and that the changes we have been examining are part of a wider, systemic change in a range of functionally associated categories, for which there are no such clearly demonstrable formal-and-functional parallels in Gunwinyguan languages). It may be objected that the move of *-rla* into the pronominal prefix system is problematic on positional grounds; but is this telling, in a pre-nominal system where the paradigmatic contrast **ngan-* versus *ngaya-* was very much alive and the **nga-* was clearly identifiable as FemSg?

There is in fact another prefix which must be compared with pre-nominal *ngarla-*, in a small area of M pre-demonstrative morphology. In both non-distant and distant 3SgF deictic categories, we find a demonstrative prefix form *ngarli-* (non-distant *ngarli-wa*, distant *ngarli-na*, which in both deictic categories contrast with Acc forms prefixed with *ngan-*, and with all other case forms which require the prefix *ngaya-* in addition to any non-zero case suffixation (Loc, All and Abl; see Merlan 1982:110). In these deictic forms, then, we have a three-way FemSg prefixal contrast *ngarli-/ngan-/ngaya-* which may be older than the three-way contrast in the modern M pre-nominal FemSg prefixes. Although the *i* vocalism of the first form cannot presently be accounted for, it seems very likely that its element *-rli-* is comparable to the suffix found distributed over Al third person 'direct' forms, and as we have also discussed, over plural/Nom suffixal forms in M. Where there are 'splits' by type of nominal category in 'split-ergative' languages, demonstratives (and/or some or all pronouns) will be more likely than nouns to show some Nominative-Accusative patterning. This is quite in keeping with what we may assume about nominal feature specifications in terms of their metapragmatic transparency (see Silverstein 1976, 1981), and their relation to case structure at morpheme- and word-level constituency. Thus we may also assume that a Nom-Acc kind of organisation would be historically prior in demonstratives (and/or pronouns) rather than nouns, and be secondarily introduced into the latter by analogical processes of the sort we might posit for the instance at hand: [pre-demonstrative] *ngaya-:nga-rli/V-*::[pre-nominal]*ngaya-:X* (where *X* is renewed as *nga-rla-*, given the distribution of the *-rla-* as a 'direct' element).

5 Nominal suffixation: summary conclusions

Substantively, we have been able to conclude that Proto Marra-M-Al had a nominal prefixation system organised on an Abs-Obl basis, and we have been able to show formal/functional correspondences among contemporary pre-nominal forms that allow us to reconstruct such a system. Second, we have described some other aspects of formal/functional redistribution in M from the posited Proto Marra-M-Al nominal prefix categories. Third, we have posited that M innovated a third pre-nominal feminine category as part of a shift to Nom-Acc organisation of case marking in the human noun classes, supported by the development of a Nom-Accusatively organised suffixal case/number-marking system on nouns and pronouns. Fourth, we have shown an element (**-rla*) to have participated in both

developments, that is in the innovation in the 3Sg feminine pre-nominal prefix, and in plural number marking on nouns and pronouns. This result is perhaps the most interesting, because on first inspection the *-rla* found in the FemSg Nom pre-nominal prefix *ngarla-*, and that found in the plural Nom/number marking suffix (*-yarla/-garla*) would not seem to be obviously relatable to each other. Yet, via comparison with Alawa, we have seen that they are historically comparable, probably reconstructable at a proto-level as an element which had a generally non-objective case distribution over free (i.e. non-bound) third person forms, both singular and non-singular, and an important discourse-related role which was compatible with functional reinterpretations of the kinds we have seen in M. Compared to the other languages, M has been relatively innovative and elaborating both in its pre-nominal morphology, and in its suffixal case/number morphology. Despite this, comparison shows reflexes of various parts of older pre-nominal, pre-demonstrative, and number/case-marking systems distributed over all the languages, their comparability demonstrable at a level of specificity required for interesting genetic subgrouping. As is so often the case in historical linguistics, it turns out to be very significantly elements which are not widely distributed, in specific formal and functional interrelations with other language elements, which are critical to reconstruction. Via the discussion of the specialisations of the element *-rla* in M, it has been possible to posit an historical source for the third FemSg pre-nominal prefix form *ngarla-*, for which no comparable forms exist in Marra and Al pre-nominal morphology and functional distribution. This last is unsurprising, as the M system, prior to this innovation, was formally and organisationally much more similar to Marra and Al.

At a more general level, this area of comparison clearly indicates the profitability of positing a Marra-Alawic genetic grouping. We have been dealing with specific morphological elements, some of which have somewhat difficult and elusive distributions in the modern languages. But they provide clear evidence for the reconstructibility of a formally and functionally defensible proto-system which accounts for them, in a far more specific way than could be achieved by the assignment of any or all of these languages to any other grouping of languages in the region. Yet, as noted at the outset, aspects of verbal organisation and formal marking suggest a link with Gunwinyguan. The following discussion of the possibilities here is only indicative, not complete.

6 Verbal suffixal categories: Mangarrayi and Gunwinyguan

Alpher, Evans and Harvey (this volume) compare some of the verbal suffixal resources of M with those of various Gunwinyguan languages. They allude to the various ways in which the M verbal system in general typological terms is very different from standard Gunwinyguan. The latter languages are polysynthetic, and many different categories of information can be expressed by the long verbal constructions. M, though it marks subject and object pronominal information by prefixation to the verbal word, is not at all polysynthetic, and does not incorporate adverbial or quantificational elements or nouns into the verb. In addition, while verb compounding is highly productive in Gunwinyguan, it is not so in Mangarrayi. However, leaving general typological issues aside, Alpher et al. show that there are a number of suffixal endings in Mangarrayi that can be fairly confidently related to endings in comparable categories in Gunwinyguan. For example, the relationship for some verbs between M Past Punctual *-b* and a Past Perfective *-m* in a good number of Gunwinyguan languages (M *bu-b*, e.g. Jawoyn *bu-m* 'hit') is matched by similar

correspondences for other verbs between M final Past Punctual *-j* and Gunwinyguan *-ny*. (See also further re what appears to be synchronically another *-b~-m* ending in M). Certain verbal paradigms, such as of Marra *ga-* 'take' seem to correspond well in a range of tense-aspect forms; whereas others present problems in one or more forms (e.g. Alpher et al. mention that the suffix in M Past Punctual *wu-na* 'gave' cannot be related to suffixes of this category in Gunwinyguan; nor can the Past Continuous form, *mi-nyi*, of the 'get' verb (*mi-*) be related to comparable forms). Nevertheless, in part, and especially for some verbs in Nonpast, Past Punctual and Past Continuous parts of the paradigm, there are plausible correspondences with Gunwinyguan forms.

Though they show some good comparable forms between M and Gunwinyguan, Alpher, Evans and Harvey by no means attempt an exhaustive evaluation of the suffixal verbal resources in M. There are a number of regular paradigm types and forms in the language that do not seem comparable to Gunwinyguan; and though it is presently not clear how these should be compared and reconstructed, nevertheless the Marra-Alawic family appears to offer some interesting possibilities. Most notably, there is an important class of M verbs, most of stem shape *CVCV-*, that have a number of interesting characteristics. They have Past Punctual forms that appear to end in *-Cag* (*namdag* 'held' from *nama-* 'hold'; *bandag* 'made' from *bana-*; *jumdag* 'mentioned' from *juma-*, *darlag* from *daya-* 'bite' etc.). The irregular verb *ja-* 'eat' also conforms to a similar patterning in its Past Punctual, *jirrag* 'ate', as does the inchoativiser *-yi-* and the reflexive-reciprocal marker *-yi-*, *-ji-*, *-(ny)jiyi*: *nam-jiyag* 'held itself', *bani-nyjiyag* 'made itself', and so on. Most of these verbs have Past Continuous forms in *-Ci*, e.g. *bandi* 'made', *namdi* 'held', *darli* 'bit' etc. The last, and certain other similar forms, suggest that, historically at least, one of the Past Continuous endings was **-rli*, an ending synchronically segmentable in both Marra (where it is the most common Past Continuous ending — see Heath 1981:230–246) and in Alawa (although here, more problematically, it appears to have nonpast tense, but continuous aspectual, value, see Sharpe 1972:88). I suspect such irregular and synchronically difficult-to-segment parts of the M verbal suffixal system are crucial to understanding its history. As of now, this paradigmatic set, significant for its irregularity and unsegmentability, does not point to a shared history with Gunwinyguan, but is suggestive at least of connections with Marra and Alawa.

There are many other elements of the M verbal system that seem quite significant to an understanding of its history, contemporary structure and historical reshaping, for which no clear Gunwinyguan correspondences come to mind. One of these is the thorough-going system of verbal augments found in two aspectually non-punctual forms, the Past Negative and the Habitual. Both forms for many verbs are built with an augment. With the verb *bu-* 'hit', for example, the relevant forms are P Neg *bu-rnda-b* 'did not hit' and Hab *bu-rnda-n* 'habitually hits', while for *daya* 'bite', they are P Neg *day-nga-m* 'did not bite' and Hab *day-nga-ma-n* 'habitually bites'. The respective augments are thus *-rnda-* and *-nga-*; for many verbs, the Hab additionally requires the element *-ma-* before a regular *-n* Nonpast ending. See Merlan 1982, Table 2–17. The fact that there is in the P Neg verb forms a regular phonologically conditioned, alternation *-b ~ -m*, (such that *bu-rnda-**b*** 'did not hit' compares with *day-nga-**m*** 'did not bite', where the occurrence of *-m* following the form with nasal-initial augment is regular) strongly suggests that this desinence is not to be compared with the *-b ~ -m* variation in the Past Punctual category, discussed above. Past Negative and Habitual are clearly aspectually continuous, while the Past Punctual of e.g. *bu-m* 'hit' is not.

Nevertheless, these desinences need to be analysed as part of the contemporary structure of Mangarrayi, and the relation of the (probably distinct) *-b* ~ *-m* alternations considered. On the face of it, the augment system is something that appears to offer an important clue to the internal reconstruction of verbal categories in Mangarrayi. Such augments are, I suggest, less likely to be subject to diffusion than are clearly segmentable verbal suffixes. I am not proposing we relegate the correspondences that Alpher et al. discuss to the 'diffusion' basket without further consideration. But I do think the old historical-comparative rule of thumb probably has some application here: that it is precisely the most irregular and difficult-to-compare contemporary forms (like the *daya-*, *darlag*, *darli* paradigms) that are liable to ultimately provide the most telling insights into historical process.

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13 *Proto Maningrida within Proto Arnhem: evidence from verbal inflectional suffixes*

REBECCA GREEN

1 The Maningrida languages[1]

The four languages Ndjébbana, Na-kara, Burarra and Gurr-goni are non-Pama-Nyungan languages spoken in north-central Arnhem Land, to the east of the Liverpool River (see Maps 1 and 3). The settlement of Maningrida is located in the country of Ndjébbana speakers, and it is the community with which most Na-kara, Burarra and Gurr-goni speakers are also associated. These languages are surrounded to the west and south by other non-Pama-Nyungan languages of the 'Gunwinyguan' family (Kunbarlang, Kuninjku and Rembarrnga), and to the east by Pama-Nyungan Yolngu languages, the nearest being Djinang.

O'Grady, Voegelin and Voegelin (1966:30–31) placed these languages in three phylic families: Gurr-goni and Burarra in the 'Bureran' family, and Ndjébbana (Kunibidji) and Na-kara as sole members respectively of the 'Kunividjian' and 'Nagaran' families. Cognate percentages calculated on a 400-word list based on recent sources are shown in the following table (two percentages are given, based on non-verbal : verbal vocabulary):

Table 1: Language family Cognate percentages (non-verbal : verbal vocabulary)

Burarra			
48% : 82%	*Gurr-goni*		
16% : 32%	24% : 43.5%	*Na-kara*	
15.5% : 29%	22% : 33%	13% : 35%	*Ndjébbana*

[1] Work on this paper commenced when I was employed as a research assistant by Professor R.M.W. Dixon. Comments on versions of the paper were also received from Barry Alpher, Gavin Breen, Nicholas Evans, Ian Green, Harold Koch and participants in the ALS PreConference Workshop on Comparative Non-Pama-Nyungan Linguistics, Monash University, Melbourne 1989, and the ICHL 2001 Workshop on subgrouping in Australian languages, Melbourne.

Nicholas Evans, ed. *The non-Pama-Nyungan languages of northern Australia: comparative studies of the continent's most linguistically complex region*, 369–421.
Canberra: Pacific Linguistics, 2003.

The cognate percentages based on non-verbal vocabulary are fairly low (except for that between Burarra and Gurr-goni), and would not, of themselves, suggest close genetic (or other) relationship. However, it is noticeable that the percentage of cognate verbs is considerably higher, in some cases twice as high (the number of verb stems recorded for these languages varies from about 180 (for Ndjébbana) to over 400 (in Burarra)). While shared items could result in some instances from borrowing, it seems unlikely that more verbs would be borrowed than nouns. Moreover, not only do these languages share a significant number of verb roots, but an examination of the verbal inflectional paradigms reveals extensive shared conjugational irregularities.

In an earlier version of this paper, presented at the ALS Preconference workshop on Comparative non-Pama-Nyungan Linguistics in 1989 (Green 1989), I reconstructed a set of TAM suffixes for what I am now calling Proto Maningrida. Twenty-three monomorphemic verbs and an intransitivising suffix were reconstructed for the proto-language. In addition, all four languages display conjugations comprising di- or polysyllabic verbs characterised by a small set of final syllables, and it was possible to reconstruct a number of such verbs and their conjugations in the proto-language.

2 Wider relationships

An early version of the Alpher, Evans and Harvey paper (this volume; hereafter referred to as AEH) was presented at the same workshop. On first inspection, comparing the posited Proto Maningrida with AEH's Proto Gunwinyguan verb paradigms revealed only a small degree of overlap: Proto Maningrida Precontemporary and Future tenses corresponded to Proto Gunwinyguan Past Continuous and Nonpast respectively. However, Proto Maningrida Contemporary tense allomorphs found no correspondence in the AEH reconstruction of Proto Gunwinyguan, nor did anything resembling the Proto Gunwinyguan Past Punctual allomorphs appear in Proto Maningrida.

In a comment on my earlier paper, however, Evans pointed out that many of the irregularities which I was reconstructing for Proto Maningrida were also found in Mangarrayi. Mangarrayi, in fact, has cognates of both the Proto Gunwinyguan Past Punctual, and the Proto Maningrida Contemporary; it provides evidence for linking the Maningrida languages to the 'Gunwinyguan' languages. The same evidence can be found in Ngandi and Nunggubuyu, and in Marra, assigned by previous investigators (e.g. O'Grady, Voegelin & Voegelin 1966:32; O'Grady, Wurm and Hale 1966) to a separate 'Maran' family along with Warndarang and Alawa.

In this revised paper I will therefore present evidence which I believe demonstrates the genetic relatedness of a large number of languages of Arnhem Land: Burarra (Glasgow 1964, 1984, 1994), Gurr-goni (Green 1995), Ndjébbana (McKay 1980, 1981a, 1981b, 1981c, 1982, 2000), Na-kara (Eather 1990, forthcoming) (forming the Maningrida group); Mangarrayi (Merlan 1982), Ngandi (Heath 1978b), Nunggubuyu (Heath 1984) and Marra (Heath 1981). Some evidence from Kungarakayn (Parish 1983), Gaagudju (Harvey 1992), Rembarrnga (McKay 1975), Kunbarlang (Coleman 1982) and Warndarrang (Heath 1980) is also included. I have not included data from the other languages on which AEH based their reconstruction (Dalabon, Bininj Gun-wok, Jawoyn, Ngalakgan, Warray and Uwinymil) only because they do not appear to have any reflexes of the suffixes which are the major focus of this paper. While displaying data from these languages would perhaps have given a clearer

picture of the retention and loss of the posited proto-forms among the alleged daughter languages, it would have been largely repetitive of what is clearly shown in AEH, and would have made the current paper too bulky. I certainly am not excluding them from the languages which I believe, and hope to show in this paper, are all related as daughters of the language to which these paradigmatic irregularities are attributable. Given the geographic spread of these languages, I suggest the name Proto Arnhem for this proto-language.

3 Proto Maningrida and Proto Arnhem

The present study focuses on twenty-four verbs which clearly demonstrate the relationship of all the languages under consideration, while also showing proof of the closer genetic relationship of the Maningrida languages. The major focus of this paper will be the reconstruction of the forms set out in columns 3 and 4 of each table. Columns 1, 2 and 5 have largely been covered by AEH (this volume). I attribute the categories posited for Proto Gunwinyguan by AEH to Proto Arnhem (see §6 for further discussion of this position, particularly in relation to the Past Perfective). These categories, the Past Perfective, Past Imperfective and NonPast, are shown in columns 1, 2 and 5 respectively. I have added data from the Maningrida languages and, where cognate verb roots and affixes are found, from Mangarrayi, Marra, Kungarakayn and Gaagadju. The AEH reconstructions appear in the penultimate row. Unless the additional data suggest a different reconstruction for Proto Arnhem, I also attribute the AEH reconstructions for these categories to Proto Arnhem.

There is less evidence on which to base a reconstruction of columns 6 and 7. Column 7, the Imperative, has zero affixation in most languages under consideration. Reconstructing zero in a category in which it is cross-linguistically common is problematic. However, in some cases there are overt suffixes which do correspond, such as those in Mangarrayi and Kunbarlang for 'sit' (Table 28) and 'mimic' (Table 19). The evidence for column 6 also appears to be stronger for some verbs than for others; in this column I show Na-kara future forms which have no cognates in the Maningrida languages, but do have apparent cognates in the wider group of languages.

In the languages I began with, Proto Maningrida and Mangarrayi, the suffixes shown in columns 3 and 4 showed striking similarity of form and shared conjugational irregularities. It is this that has guided my search for cognates in other languages. Rather than showing all the exponents of any one TAM category, I have shown in columns 3 and 4 all the apparent cognates of the Proto Maningrida and Mangarrayi forms. I will firstly attempt a reconstruction of the forms for two verbs, 'see' and 'give', and then, by comparing the meaning and function which these forms express in the languages concerned, suggest possible TAM categories for the proto-language.

I will begin by examining the paradigms of the verbs 'to see' (Table 2) and 'to give' (Table 3 below). These verbs can be discussed simultaneously as, in all the languages surveyed here which have cognates of these verbs, 'see' and 'give' take the same set of TAM allomorphs.[2]

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2 Except in one TAM category in each of Ngandi, Nunggubuyu and Marra: in the first two languages, the column 5 form differs; in Marra, the column 3 form differs.

3.1 'see' and 'give'

3.1.1 'see' and 'give' in Proto Maningrida

Looking firstly at the column 3 forms, the Contemporary tense suffixes, we see that in the paradigm for these monosyllabic verbs, in Burarra and Gurr-goni a geminate stop *jj* corresponds to a single or short stop *j* in Ndjébbana and a glide *y* in Na-kara.

A similar paradigm to that posited for **na* and **wu* can be reconstructed for Proto Maningrida involving di- and polysyllabic verbs. Two of these verbs, **jarnta* 'hurt (tr)' and **pawu* 'leave (tr.)' are shown in Tables 4 and 5. The Burarra and Gurr-goni reflexes of the column 3 Contemporary tense suffixes for these disyllabic roots show a single stop *j*, again corresponding to a glide *y* in Na-kara.

Table 2: **na*[3] 'see'

	1	2	3	4	5	6	7
		Pre[4]	Con	IrrFutCont	IrrNPre[5]	Fut	Imp/Fut
B *na*		*na-na*[6]	*na-jja*	*na-jjin*	*na-n*		*na-ø*
G *na*		*na-ni*	*na-jji*		*na-n*		*na-ø*
Ndj *na*		*ná-na*	*ná-ja*				*na-ø*
Nkr *na*		*na-na*	*na-ya*			*na-ya*	
pMan		**na-ni*	**na-jja*	**na-jjin*	**na-n*	**na-ya*	**na-ø*
Ngan	PPunct	PCon	Pot	Pres	Fut/Imp	Evit	Imp
rna	*rna-y*	*rna-ni*	*rna-jjan*	*rna-jjini*	*rna-n*	*rna-yi*	*=Fut*
Nu	P1	P2	Evit	NP2	NP1	NP3	Imp
na	*na-ny*	*na-ni*	*na-yan*	*na-yii*	*na-ng*	*ni-ø*	*=NP1-3*
Kunp	RP	IrrP			RNP		IrrNP
	na-y	*na-ni*			*na-ny*		*na-ø/rnay*
Marr	PPunct	PCon	$Pres_3$	$Pres_{1-2}$	Fut	Pot	Imp
na	*(na-ji)*	*na-ni*	*na-ja*	*na-jini*	*na-y*	*na-yi*	*na-ø*
AEH	PP	PI			NP		
**na*	**na-y~na-ng*	**na-n-iny*			**na-n*		
pArn	PP	PI	Hab/IrrP	NP1	NP2	Irr	Imp
**na*	**na-y~na-ng*	**na-ni*	**na-jan*	**na-jini*	**na-n*	**na-yi*	**na-ø*

3 The orthography used in this paper is identical to that used by AEH and Harvey (this volume), except that *j* is used instead of *c* for the palatal stop.

4 Abbreviations used for TAM categories are: Con - contemporary; Evit - evitative; Fut - future; Hab - habitual; Imp - imperative; Irr - irrealis; IrrFutCont - irrealis future continuous; IrrNFut - irrealis non-future; IrrNP - irrealis nonpast; IrrNPre - irrealis non-precontemporary; IrrP - irrealis past; IrrPre - irrealis precontemporary; NP(1,2,3) - nonpast (1,2,3); P(1,2) - past (1,2); PCon - past continuous; PI - past imperfective; PNeg - past negative; Pot - potential; PP - past perfective; PPunct - past punctual; Pre: precontemporary; Pres(1-2,3) - present (1-2,3); RNP - realis nonpast; RP - realis past; RPerf - realis perfective.

5 In Burarra, Future tense is expressed by the column 7 form plus a particle *parra*; the column 5 form expresses Irrealis NonPrecontemporary tense. In Gurr-goni, Future tense is expressed by the column 5 form, and Irrealis NonPrecontemporary by the column 7 form.

6 In all the languages included here, the inflected verb includes pronominal prefixes as well as TAM suffixes. None of the forms shown here (except the Imperative in some languages) occurs without such prefixes, but they are omitted here for ease of display.

Table 3: **wO* 'give'

	1	2	3	4	5	6	7
		Pre	Con	IrrFutCont	IrrNPre	Fut	Imp/Fut
B *wu*		*wu-na*	*wu-jja*	*wu-jjin*	*wu-n*		*wu-ø*
G *wu*		*wu-ni*	*wu-jji*		*wu-n*		*wu-ø*
Ndj *wu*		*wú-na*	*wú-ja*				*wa-ø*
Nkr *wu*		*wu-na*	*wu-ya*			*wu-ya*	
pMan		**wu-ni*	**wu-jja*	**wu-jjin*	**wu-n*	**wu-ya*	**wu-ø*
M	PPunct	PCon	Hab/PNeg		Pres		Imp
wu	*(wu-na)*[7]	*wu-ni*	*wu-ya-n/-p*		*wu-n*		*wu-ø*
Ngan	PPunct	PCon	Pot	Pres	Fut/Imp	Evit	
wo	*wo-y*	*wo-ni*	*wo-jjan*	*wo-jjini*	*wo-nung*	*wo-yi*	
Nu	P1	P2	Evit	NP2	NP1	NP3	
Ind	*ya-ny*	*i-ni*	*i-yan*	*i-yii*	*i-ny*	*yuu*	
Cpd	*-a-ny*	*-u-ni*	*-u-yan*	*-u-yii*	*-u-ny*	*-uu*	
Kung	RPerf	Irr	NP	IrrNFut			
wu~wi	*wi-ny, wi-jany*	*wi-ni* (PI *wujawu-janang)*	*wu-jen*	*wu-jene*			
Kunp	RP	IrrP			RNP		IrrNP
wu	*wu-y*	*wu-ni*			*wu-ny*		*wu-ø/ wu-y*
Marr	PPunct	PCon	$Pres_3$	$Pres_{1-2}$	Fut	Pot	Imp
wa	*(wa-ji)*	*wa-ni*	*wa-jungu ND*[8] *wa-jaju D*	*wa-jini*	*wa-y*	*wa-yi*	*wa-ø*
Gaag	PP	PI	Pres			Con	Imp
wu~wo	*wu*	*wu-ni*	*wo-y*			*(wo-ya)*	*wu-ø*
AEH	PP	PI			NP		
**wo*	**woy ~wong*	**woniny*			**won*		
pArn	PP	PI	Hab/IrrP	NP1	NP2	*Irr	Imp
**wO*	**wO-y?*	**wO-ni*	**wO-jan*	**wO-jini*	**wO-n*	**wO-yi*	**wO-ø*

Table 4: Proto Maningrida **jarnta* 'hurt'

	2	3	5	7
B *jernta*	*jernta-nga*		*jernta-n*	*jernta-ø*
G *jarnta*	*jarnta-ni*	*jarnta-ji*	*jarnta-n*	*jarnta-ø*
Nkr *jarnta*	*jarnta-na*	*jarnta-ya*		*jarnta-ø*
pMan **jarnta*	**jarnta-ni*	**jarnta-ja*	**jarnta-n*	**jarnta-ø*

7 Forms which do not appear to be cognate are shown in brackets.

8 Many Marra verbs have durative and non-durative forms: the non-durative is basic, with the durative formed by reduplication or prefixation. Both forms are shown only where the suffixes also differ, as here.

Table 5: Proto Maningrida **pawu* 'leave'

	2	3	4	5	7
B *pawa*	*pawa-na*	*pawa-ja*	*pawa-jin*	*pawa-n*	*pawa-ø*
G *pawu*	*pawu-ni*	*pawu-ji*		*pawu-n*	*pawu-ø*
Nkr *pawa*	*pawa-na*	*pawa-ya*			*pawa-ø*
pMan **pawu*	**pawu-ni*	**pawu-ja*	**pawu-jin*	**pawu-n*	**pawu-ø*

(A cognate verb is found in BGW (column 2 *pawo-ni* PI, column 5 *pawo-n* NP); D column 2 *pawo-niny* PI, etc. (Evans pers. comm.); **pawu/o* can probably be attributed to Proto Arnhem.)

Although Ndjébbana does not have cognates for either of these verbs, it does have polysyllabic verbs with a similar paradigm, eg *ngárawa* 'light fire': column 2 *ngárawa-na*, column 3 *ngárawa-ya*, column 7 *ngárawa-ø*.

It appears that Burarra and Gurr-goni (or more accurately perhaps the intermediary proto-language Proto Burarra/Gurr-goni) had a conditioned alternation between geminate and single stops. In verb suffixes (such as those shown here) and in pronouns, geminate stops appear following root-initial, stressed CV syllables; single stops occur in the same morphemes when the stress does not immediately precede the stop in question, or where the stressed syllable is closed (for example, G *ngújjuyu* '3MinFemPoss$_C$'; *ngijíyi* ~ *ngijiyéppu* '3MinCard' (Green 1995:12–13). In Ndjébbana, single stops, geminates and semivowels alternate in verbal and nominal root initial position, conditioned by shifting stress. Geminates are found medially before stressed vowels, semivowels occur medially before unstressed vowels, and single stops initially (for example, *ka-jjúwa* 'he is sick', *ka-yawé-la* 'he was sick/died', *jawé-la* 'be sick/die!'. This alternation, while not fully productive, appears to have been so at a recent stage of the language (McKay 2000:184–185). In the verbs under consideration here, we see a different phenomenon: an alternation in suffix-initial position between a single stop following a stressed vowel (as in *-ná-ja, -wú-ja*), and a semivowel following an unstressed vowel, as in *ngárawa-ya.* This environment is the same as that in which the alternation between geminate and single stops is found in Burarra and Gurr-goni, and suggests that an alternation, most probably between a geminate and a single stop, can be attributed to Proto Maningrida. In Ndjébbana, the single stop would then have lenited to a glide, and the geminate stop reduced to a single stop.

In Na-kara, reduction of the geminate stop would appear to have preceded lenition of **j* > *y*, as *y* follows both the monosyllabic and disyllabic roots. Other instances of a putative proto-phoneme **j* leniting to *y* intervocalically can be found in Na-kara: cf. Na-kara, Ndjébbana *méyameya* with Gurr-goni *mejimeji*, all 'hair', < **mejVmejV*; and Na-kara *ngiya-ka-ppa,* Gurr-goni *ngiji-yé-ppu* (Ndj *ngayáppa)*, all 'third person minimal feminine cardinal pronoun', < **ngijV-kV-ppV*.[9] (There are no other known instances of *jj* reducing to *j* in Na-kara. While there is some evidence of reduction of other geminates (e.g. **juppV*

[9] Compare B *-nikíppa*, G *niyéppu*, Ndj *naképpa*, Nkr *nakáppa* ('3MinNonFem' in all languages except Burarra, where it is simply '3 Min'). Either Gurr-goni has undergone a lenition *k*>*y*/__*e*, or it has replaced the morpheme *-kV-* with a morpheme *-ye-* ~ *-yi-*. Comparing the feminine noun class prefix *jin-* in B and G, with *kin-* in Nkr, and, on a deeper level, comparing G *jinyi* 'cook' with BGW *kinye*, D *kiny-* 'cook', suggests that palatalisation of *k* did occur in Proto Burarra/Gurr-goni, at least before *i*. The change *k* > *y* is not otherwise attested in Gurr-goni, but regardless of the cognacy of this segment, it is clear that the initial segments, illustrating *j* > *y*, are cognate.

'extinguish' (B *juppa*, G *juppi/u*, Ndj *júppa*, Nkr *jupakarama*), there are many apparent examples where geminates have been retained in Na-kara (**kakka* 'push, move' > Nkr *kakka*; **worlppu* 'hunt' > Nkr *worlppa*, etc.).

The only vowel which occurs finally in TAM suffixes in Burarra,[10] Ndjébbana and Na-kara is *a*; only in Gurr-goni do the other vowels occur in this position. As their occurrence in Gurr-goni is not completely predictable, I originally attributed them to the proto-language, positing a shift of final vowels to *a* in the other three languages.[11] However, while the wider cognates support the reconstruction of **-ni* for column 2, they suggest **-jja* for column 3 (see below for discussion). It seems necessary to posit a shift from **-jja* to **-jji* at some point to account for the Gurr-goni form, but it is simpler to say that this took place in Gurr-goni than at the Proto Maningrida stage, which would then have to be reversed in all three other languages by a shift of final *i* > *a*. The Gurr-goni form may have developed through analogy with the column 2 form. It may also be relevant to note that Gurr-goni speakers are aware that Burarra and Gurr-goni forms often differ only on this one point (a verb suffix ending in *a* is Burarra; a verb suffix ending in *i* or *e* is Gurr-goni), and it is possible that this conscious knowledge has influenced the development of some forms. As Evans (1998:143) notes, '[i]n speech communities ... where multilingualism is all-pervasive[12] ... it is common for speakers to be aware of correspondence patterns between their own language and its neighbours, and to use this awareness to extend such patterns analogically through the vocabulary'.

3.1.2 'see' and 'give' in Proto Arnhem

AEH reconstructed Past Punctual (column 1) **nay~nang, *woy~wong*, Past Imperfective (column 2) **na/wo-niny*, and Nonpast (column 5) **na/wo-n*, noting also cognacy between Ngandi Evitative (column 6) and Dalabon and Bininj Gun-wok Irrealis (see AEH Table 2). I have added paradigms from Marra and Kungarakayn. I suggest that these languages also show some evidence of systematic paradigmatic irregularity. Thus Kungarakayn Past perfective *wi-ny* is plausibly derived from the putative PP **wO-y* (probably through **wu-y*; the root variants in Kungarakayn are *wu-* and *wi-*); cf. the discussion of Nunggubuyu in AEH §3.1 and §3.2. The Marra PP form *-ji* is unlikely to have derived from **-y* if Marra *na-yi* is a reflex of a pArn **na-yi* (column 6); it may perhaps have been reformed by analogy with the column 3 and 4 forms.

With regard to their reconstruction of the PI (column 2) form, AEH note that the weight of evidence within the languages they consider favours epenthesis rather than loss of the final nasal *ny*. However, they decide to reconstruct pGN **naniny*, etc., with the final *ny*, as other column 2 (PI) forms with final nasals do exist; see their discussion in AEH §2.2. The

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10 The Burarra dialect Gun-nartpe also has suffix-final vowels other than *a*. Not enough information is available to include it in this comparison.

11 McKay (2000:180) notes for Ndjébbana that 'all five vowel phonemes are clearly differentiated when stressed and long, but there is a tendency for all vowels to be reduced to *a* when not bearing the phonemic stress and length'.

12 Multilingualism is pervasive in the Maningrida area generally, as in many areas of Australia, but is particularly pronounced in the case of the Gurr-goni, who constitute a very small group of speakers, and appear to have done so for some time. Marriage is always with speakers of other languages (Ndjébbana, Na-kara, Kuninjku, Rembarrnga, Burarra and others), hence all Gurr-goni family groups are multilingual.

additional languages I consider here (the Maningrida languages, Marra and Warndarrang, and Kungarakayn) lend more weight to the epenthesis hypothesis, and I have posited no final *ny*. The possibility that it may be an innovation could be worth exploring.

AEH also reconstruct the root vowel as **o*. Considering all the languages shown here, and those for which AEH show cognates of 'give', I suggest that the weight of evidence is fairly evenly balanced between **u* and **o*. Some languages show alternation of *o* (or reflexes of **o*) and *u* within the paradigm, and it is possible that this also occurred in the proto-language. However, it has not been possible to determine which vowel should be reconstructed for which TAM category, and I therefore show **O* (representing **o* or **u*, or the alternation of these vowels).

However, I do not intend to focus here on those categories which have been covered in detail by AEH, and will thus discuss only columns 1 and 2, and 5 where the additional putative cognates suggest alternative reconstructions. My major concern here is with the establishment of the categories and their allomorphic exponents shown in columns 3 and 4.

For the verbs shown in Tables 2 ('see') and 3 ('give'), comparing Proto Maningrida column 3 **-jja* with Ngandi *-jjan*, Nunggubuyu *-yan* and Kungarakayn *-jen* suggests that a final *n* was present in Proto Arnhem: **-jan*. Similarly, the evidence of Ngandi *-jjini*, Marra *-jini* and Kungarakayn *-jene*, compared with Proto Maningrida **-jjin*, leads me to posit Proto Arnhem **-jini* for column 4. Nunggubuyu *-yii* gives some slight support to this: Heath (1978a:45) observes that 'long vowels have been created by various processes, including contractions such as **eṛe* –> *a:*, **awa* –> *a:* and the like'. Possibly these processes also included loss of intervocalic *n*, giving **-jini* > **-jii* > *-yii*. Proto Maningrida would then have lost the final nasal from column 3 **-jjan*, and the final vowel from column 4 **-jjini*. In Marra and Mangarrayi, we also have to posit loss of *n* from **-jan* (although in Mangarrayi, the Habitual suffix, one of the two that follow the *-ya-* augment, is *-n*).

Reconstruction of the initial stop of these suffixes is problematical. The existence of a geminate in both Proto Maningrida and Ngandi suggests the possibility that it may have been present in Proto Arnhem. Marra and Mangarrayi do not have geminate stops, so development of a putative **jj* to *j* would have been automatic here. (Marra column 3 *wa-jungu* retains *j*, but an additional syllable *-ngu* appears to have been added; it is, however, not present in the durative *wa-jaju*, which suggests **wa-ju* as the original non-durative form in Marra. The shift of **-ja* > *-ju* on this verb is unexpected.)

In Mangarrayi, Merlan (1982:207–209) notes synchronic lenition of *j* to *y* intervocalically in the morphemes *-ji-* 'inchoative' and *-ju-k* 'swear at' (when this is used as a 'compounding auxiliary'). We can plausibly speculate that the attested suffix *-ya-* derives from **-jan* (whether this is the Proto Arnhem form, or its reflex in Mangarrayi following automatic reduction of a putative geminate) by the same process.

Kungarakayn does have geminate stops. Whether these are present in clearly ancient and inherited forms is not clear; it is possible that Kungarakayn, in its development from Proto Arnhem, could have reduced geminate stops to single stops and then have reintroduced geminates later through borrowed vocabulary.

The situation in regard to Ngandi and Nunggubuyu is less clear. Heath (1978a:5) hypothesises that 'Ngandi and Nunggubuyu ... form a subgroup within the prefixing group', and furthermore, that their parent language had a contrast between two series of stops (which he terms fortis and lenis respectively, for what I am terming geminate and single). Nunggubuyu then lost this contrast, through a process of shifting 'old fortis to modern simple

stops ... old lenis stops in most cases became continuants' (Heath 1978a:37). The correspondence of Ngandi *jj* and Nunggubuyu *y* is not accounted for by this hypothesis; nevertheless, for his proposed 'central' genetic subgroup (comprising Ngandi, Nunggubuyu and Anindilyakwa) Heath (1990:406) reconstructs a Present tense suffix **-jini* for 'see' and 'give'. He appears to be implying that Ngandi independently developed a geminate stop in this suffix. If this is so, there remains very little evidence for reconstructing a geminate in Proto Arnhem. Instead, we would appear to have original forms **na-jan, *wO-jan, *na-jini, *wO-jini*, with gemination occurring independently in Proto Maningrida and in Ngandi.

I propose that Gaagudju *wo-y* 'give-Pres' is a reflex of **wO-jan* (with loss of the final nasal as in pMan, and probably also in Marra); lenition *j* > *y* as in Mangarrayi, Nunggubuyu and Na-kara; and, finally, loss of the vowel, which, in this category, would have occurred in Gaagudju alone. It may be thought more likely that Gaag *wo-y* continues pArn PP **wO-y*. However, a parallel Present tense form is found for 'spear' (**ra-jan* > Gaag *(pa)ra-y*), where the PP is **ra-m*; and for other verbs too, the Gaag Present tense appears to derive from the pArn Habitual/PastIrrealis (column 3) (see especially §3.12, 'lie', 'be standing', 'sit', and §3.13 'take'). (This identification would imply that the Gaag form shown in column 6 of Table 3, *wo-ya*, although superficially a possible cognate of Nkr *wu-ya*, Ngan *wo-yi* and Marr *wa-yi*, is probably a later innovation. If the proposed development of **wO-jan* > *wo-y* occurred, a proto-form **wO-yi* would also be expected to become **wo-y* in Gaag; this is not what appears.)

It remains then to account for the occurrence of the vowel *e* in the Kungarakayn column 3 form *-jen*. Evans (pers. comm.) has noted instances of apparent vowel raising in Kungarakayn, including several of a putative **a* > *e* (for example pArn **-pam(i)* 'head', Kung *ki-pem;* pArn **wany* 'armpit', Kung *ki-weny).* The shift of **a* > *e* is triggered in this example by a high front vowel in the preceding syllable (the prefix *ki-*, which probably originally marked body parts and adjectives (Evans pers. comm.)). The proposed derivation of *wu-jen* involves a shift from *a* > *e* triggered by a high back vowel in the preceding syllable, thus **wO-jan* > **wu-jan* > *wu-jen*. In column 4, the vowels in the proto-language were clearly *i*; all languages but Kungarakayn agree on this, and the Kungarakayn column 4 form may well have been influenced by the column 3 form.

3.1.3 Suffixal category: column 3

We have now added the suffixes **-jan* and **-jini* to those reconstructed by AEH for 'see' and 'give'. Having determined their forms, we must also consider their functions in the proto-language.

MANINGRIDA In all the Maningrida languages, the column 3 form is used to signal Contemporary[13] tense, Realis mood, and the column 2 form Precontemporary tense, Realis mood; there is thus no difficulty in assigning these functions to Proto Maningrida. These two tenses between them cover all time prior to, and including, the moment of speaking. Both tenses are discontinuous. Thus the total range of Contemporary tense is from 'now (the moment of speaking)' to 'yesterday/recently'; but this is interrupted by Precontemporary tense for 'today before now', for which Contemporary tense cannot be used. The total range

[13] The terms Precontemporary and Contemporary are used by Eather (1990:165) and Green (1995:183–189); Precontemporary has been called 'remote' by Glasgow (1964:118) and McKay (2000:223).

of Precontemporary tense is from just before the moment of speaking, to the far distant past; but this is interrupted by Contemporary tense for 'yesterday', for which Precontemporary tense cannot be used. The tenses can be understood as dividing three time frames,[14] today, before today, and all time until now. Within the time frame of today, Contemporary tense refers only to the moment of speaking, with the remainder (the earlier part) of today covered by the Precontemporary tense. In the time frame of before today, Contemporary tense refers to the recent past, while Precontemporary refers to the more distant past; in the third time frame, Contemporary tense is used for actions taking place at the moment of speaking, for states or actions which are ongoing or habitual, and for generic statements. Precontemporary is used for states or events of long ago.

In all four of the languages, the column 3 suffix, or a form related to it, also appears in the Irrealis Precontemporary category; this is marked by the Contemporary tense suffix plus *-rna* in Burarra, *-rni* in Gurr-goni, *-na* in Ndjébbana and *-ma* in Na-kara. The Precontemporary Irrealis is used following a negative particle to refer to events that did not happen before now, earlier today and before yesterday. Used independently, it has two functions: one of referring to events which have not happened, but which the speaker can imagine having happened (a past potential use); and a second function of referring to events characteristic of a time long ago (a past habitual use). The Precontemporary Irrealis category, and the use of the Contemporary tense form plus a suffix, can also be attributed to Proto Maningrida. (The existence of a Past Negative suffix *-m~-p* in Mangarrayi makes it tempting to speculate that *-m* or *-ma* was the original form of the suffix in Proto Maningrida, and indeed in Proto Arnhem.)

MANGARRAYI In Mangarrayi, the column 3 suffix appears as an augment before the regular Past Negative and Habitual suffixes (*-m~-p* and *-n*, respectively). The Past Negative is used with the negative particle as a 'simple negation of a past positive'; used without this particle it expresses 'the obligative meanings 'should, should have' or an intentional meaning 'meant to', and with the addition of a desiderative-intentional suffix *-wᵢu-~-gu-* to the past negative, a form is created which expresses past intention, desire and sometimes also a nuance of past obligative meaning' (Merlan 1982:150). The habitual 'is sometimes merely used to express habitual activities ... However, habitual is more frequently used to express inherent activity, or activity characteristic of the agent' (Merlan 1982:148).

NGANDI AND NUNGGUBUYU In Ngandi, the column 3 form encodes the Potential mood; this 'is used in various past potential senses ('was going to', 'was just about to', 'would have', 'should have') and occasionally in present potential sense ('should'). As the translations suggest it often involves the notion of duty or obligation (rather than of mere capacity)' (Heath 1978b:106). In Nunggubuyu this form is the Evitative suffix; this category 'is used for an undesirable potential event which can be avoided by prudent action' (Heath 1984:346). It seems likely that in Proto Ngandi-Nunggubuyu, this was the potential form, and that the meaning has shifted in Nunggubuyu.

MARRA In Marra, this form marks the Present Positive and the Evitative (the Evitative is distinguished from the Present Positive by stem initial changes or stem suppletion). The Present tense in Marra is marked by two sets of suffixes: one (this suffix) 'is used only for third person forms ... (third intransitive, or third>third transitive)' (Heath 1981:186); the other is used where first and second persons are involved. Heath labels these Present$_3$ and

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14 The use of time frames to understand these tenses was first proposed by Glasgow (1964:118).

Present$_{1-2}$ respectively. However, 'the Pr$_3$ form, in addition to its use in third and third>third present positive forms, can be used ... for any pronominal category with the future indefinite positive ... a rare verbal category' (Heath 1981:228). Of this category, Heath says that 'it is difficult to pin down the exact nuances. It may be that the future/indefinite positive indicates a conjectural sense involving a possible event at an indefinite time in the near future (Heath 1981:186-187). It seems possible that this was its original function. The Evitative 'indicates a possible future event or situation, normally undesirable or catastrophic, which may result if a certain unfortunate course of action is taken by someone' (Heath 1981:187).

KUNGARAKAYN In Kungarakayn, the column 3 form expresses Nonpast tense, Realis mood (Parish 1983).

*HABITUAL/IRREALIS (PAST?) We see then that in Burarra, Gurr-goni, Ndjébbana and Nakara (and thus probably in Proto Maningrida), and in Mangarrayi, the column 3 suffix appears in categories expressing both present actions or habitual, characteristic actions and states, and also refers to actions which have not happened, but might have (in the past) or might (in the future). Ngandi and Nunggubuyu express only the second of these meanings through this suffix. Anticipating the presentation of paradigms for other verbs, we can note that for some verbs Gaagudju and Rembarrnga have cognate suffixes which express present tense, and cognate suffixes appear for a few verbs in Warndarrang in the Past Realis Continuous. There are thus also languages where this suffix encodes a single function closer to the first meaning.

It is not unusual to find one form encoding both past habitual and past potential or counterfactual functions (this is common, for example, in Indo-Aryan, Dravidian and Munda languages of South Asia (von Munkwitz-Smith 1995 and pers. comm.), and occurs in English (among the uses of the modal verb 'would' are past habitual and past potential), and in the Californian language Tolkapaya Yavapai (Harvey & Gordon 1980:191). I would suggest that reconstructing a dual function of habitual aspect and irrealis mood (probably past tense) would be compatible both with the other TAM categories proposed for this proto-language, and with the functions held by the reflexes of this proto-form in the daughter languages.

3.1.4 Suffixal category: column 4

Five of the languages, Burarra, Ngandi, Nunggubuyu, Marra and Kungarakany, also have another nonpast category, encoded by the suffixes shown in column 4.

BURARRA In Burarra, Glasgow (1984:35) terms the suffix category shown in column 4 'continuous probability', which 'defines a probable action as a repetition ("again")', e.g. 'he might pick it up again'.

NGANDI AND NUNGGUBUYU In Ngandi, the relevant form encodes the Present tense. This is used for events happening in the present, and '(as in English) can sometimes be extended to prospective events in the immediate future ... "I am going (now, or in a little while)"' (Heath 1978b:105).

In Nunggubuyu, Heath (1984:337–339) has labelled the suffix shown in column 4 as NonPast 2: it is used to mark the categories Present Positive and Future Continuous Positive (these categories take different sets of pronominal prefixes).

MARRA In modern Marra (Heath 1981:186), the column 4 suffix expresses the Present$_{1\text{-}2}$, which encodes the present tense for first and second persons in modern Marra, and may have done so for all persons in the proto-language (see §3.1.3 above).

KUNGARAKAYN In Kungarakayn, the column 4 form is recorded as an Irrealis Nonfuture (Evans pers. comm.).

COLUMN 4: NONPAST 1 Thus we see that Nunggubuyu expresses both Future Continuous (positive) and Present (positive) through this suffix. Ngandi expresses Present tense (which may be used for events in the immediate future). The Burarra category could be called Future Potential Continuous. The Marra form expresses Present tense only, and the Kungarakayn one Present and Past Irrealis. The most common element here is reference to nonpast tense, usually present, but in Burarra future, and in Kungarakayn in fact not non-past, but present and past (i.e. non-future). Other common threads are Continuous aspect (in Nunggubuyu and Burarra) and, perhaps, irrealis mood (in Burarra and Kungarakayn).

In considering the functions of the proposed column 3 form in the proto-language, we must obviously take into account the other nonpast category being reconstructed for Proto Arnhem, reflexes of which are shown here in column 5. Only two languages, Ngandi and Burarra, have clear reflexes of the column 5 proto-form *-*n*, as well as of the column 4 proto-form *-*jini*. In Ngandi, -*n* is used with 'see' to encode the future tense and the imperative mood (Heath 1978b:105–106). In Burarra, Glasgow (1984:32) describes this suffix as one of the 'probability series of four aspects [which] occur [...] optionally on verbs in the subjunctive mood of non-past tense'; this particular suffix 'define[s] an action as a definite prediction or as having consequence' (Glasgow 1984:35). (Many Burarra verbs have only one irrealis non-past (= non-precontemporary) suffix, however (and none have four). With 'see' and 'give', which have two, -*n* contrasts only with the irrealis 'repetition' suffix -*jjin*, and it is probably best regarded as the unmarked non-precontemporary irrealis (or potential) category.)

It is possible that Proto Arnhem made a distinction between present and future tense, or that some kind of aspectual distinction was made in the nonpast. As it is hard to determine which is more likely (or what the aspectual distinction could have been) from the available evidence, I will refer to these two categories simply as Nonpast 1 (column 4) and Nonpast 2 (column 5).

Having suggested possible TAM categories for the column 3 and 4 forms in the proto-language, I will now proceed to reconstruct these forms for other verbs. As we shall see below, the TAM allomorphs for the Habitual/Irrealis (past?) and Nonpast 1 categories are conjugationally determined. Before moving on to verbs which select different allomorphs, however, we will examine others for which *-*jan* and *-*jini* can probably also be reconstructed. These verbs are 'spear', 'see, visit', 'consume', and 'hear' (all of which have been considered by AEH).

3.2 'spear'

3.2.1 'spear' in Proto Maningrida and Proto Arnhem

AEH reconstruct the verb 'spear' on the basis of its occurrence at opposite sides of Arnhem Land, in Warray in the west, and in Nunggubuyu in the east. It is also found in Kungarakany, and in all the Maningrida languages, which, located in the north of the area

and not in contact with either Nunggubuyu or the western languages, add support to the argument that this root can be attributed to Proto Arnhem. The root can be reconstructed as **ra* in Proto Maningrida (the correspondence of Burarra/Gurr-goni *rr* to Ndjébbana *r* and Na-kara *rt* is also found in the paradigms of 'lie', 'be standing', 'sit', see §3.12). All the languages except Ndjébbana have the expected reflexes of column 3 **-jan*, and Burarra and Nunggubuyu have the expected reflexes of column 4 **-jini*. We therefore add these two suffixes to the set proposed by AEH for this root. (The Ndjébbana form *-ya* appears to be irregular; perhaps lenition has occurred following the root initial *r*.) See Table 6.

3.3 'consume', 'hear' and 'follow'

For **ngu* 'consume' (Table 7) and **nga* 'hear' (Table 8), only Ngandi and Nunggubuyu provide evidence of the column 3 and 4 forms, and reconstruction of **-jan* and **-jini* is therefore more tentative, as it is possible that these are intrusions or analogic replacements from another verb root. Kungarakayn may have a suffix cognate with the column 4 forms for 'hear', but this is not certain, as here we find *-yene* rather than *-jene* (which occurs with 'see'). As *-y-* appears in all tense forms of 'hear' in Kungarakayn (except the PP variant *ngo-weng*), it should perhaps be analysed as part of the root. It is also difficult to account for the variant vowels of this root (*a* in Ngandi and Nunggubuyu, *o~u* in Kungarakayn). For **wa* 'follow' (Table 9), it is Mangarrayi which provides the only column 3 form, and, again, reconstruction of **-jan* is therefore tentative.

Table 6: **ra* 'spear'

	1	2	3	4	5	6	7
		Pre	Con	IrrFutCont	IrrNPre	Fut	Imp/Fut
B	*rra*	*rra-na*	*rra-jja*	*rra-jjin*	*rra-n*		*rra-ø*
G	*rra*	*rra-ni*	*rra-jji*		*rra-n*		*rra-ø*
Ndj	*ra*	*rá-na*	*rá-ya*				*ra-ø*
Nkr	*rta*[15]	*rta-na*	*rta-ya*				*rta-ø*
pMan	**ra*	**ra-ni*	**ra-jja*	**ra-jjin*	**ra-n*		**ra-ø*
Nu	PI	P2	Evit	NP2	NPI	NP3	
ra	*ra-ng*	*ra-ni*	*ra-yan*	*ra-yii*	*ra-yang*	*ra-yi*	
Gaag	PP	PI	Pres			Con	Fut
para	*para*	*para-ni*	*para-y*			*pa'raaya~ pari*	*para*
Kung	PI			IrrNFut	NP		
la~lo	*la-m ~ lo-m*			*(lo-mere)*	*(lem)*		
AEH	PP	PI			NP		
**ra*	**ra-m*	**reniny*			**ren*		
pArn	PP	PI	Hab/IrrP	NPI	NP2	Irr	Imp
**ra*	**ra-m*	**ra-ni*	**ra-jan*	**ra-jini*	**ra-n*	**ra-yi*	**ra-ø*

15 The Na-kara detransitivised root for 'spear' is *lajjaya* (Eather 1990:228).

Table 7: **ngu~ngo* 'consume'

	1	2	3	4	5	6
Ngan	PPunct	PCon	Pot	Pres	Fut/Imp	Evit
ngu	*ngo-ng*	*ngu-ni*	*ngu-jjan*	*ngu-jjini*	*ngu-nung*	*ngu-yi*
Nu	P1	P2	Evit	NP2	NP1	NP3
	nga-ng	*ngu-ni*	*ngu-yan*	*ngu-yii*	*nga-ng*	*ngi-ø*
AEH	PP	PI			NP	
**ngu*	**ngong*	**nguniny*			**ngun*	
pArn	PP	PI	Hab/IrrP	NP1	NP2	Irr
**ngu~ngo*	**ngo-ng*	**ngu-ni*	**ngu-jan*	**ngu-jini*	**ngu-n*	**ngu-yi*

Table 8: **nga* 'hear'

	1	2	3	4	5	6
Ngan	PPunct	PCon	Pot	Pres	Fut	Evit
nga	*nga-ng*	*nga-ni*	*nga-jjan*	*nga-jjini*	*nga-n*	*nga-yi*
Nu	P1	P2	Evit	NP2	NP1	NP3
yanga	*yanga-ng*	*yanga-ni*	*yanga-yan*	*yanga-yii*	*yanga-ng*	*yangi-ø*
Kung	RPerf		NP	IrrNFut		
ngo	*ngo-weng* *ngo-ying*		*(ngo-yong)* *(ngu-yem)*	*ngo-yene*		
AEH	PP	PI			NP	
**nga*	**ngam ~* **ngang*	**nga-niny*			**ngan*	
pArn	PP	PI	Hab/IrrP	NP1	NP2	Irr
**nga*	**nga-ng?*	**nga-ni*	**nga-jan*	**nga-jini*	**nga-n*	**nga-yi*

Table 9: **wa* 'follow, see, visit'

	1	2	3	5	7
M	PPunct	PCon	Hab/PNeg	Pres	Imp
wa	*wa-p*	*wa-ni*	*wa-ya-n/-p*	*wa-n*	*wa-w*
AEH	PP	PI		NP	
**wa*	**wam*	**waniny*		**wan*	
pArn	PP	PI	Hab/IrrP	NP2	Imp
**wa*	**wa-m*	**wa-ni*	**wa-jan*	**wa-n*	**wa-w?*

3.4 'get'

The paradigm for the verb 'to get' is shown in Table 10.

3.4.1 'get' in Proto Maningrida

Here, I have reconstructed Precontemporary **ma-ngi*, Contemporary **ma-ngka*, **ma-n* (etc.). It is possible, given G *me-nyi*, *me-kka*, *me-n*, and M *mi-nyi, mi-ngka*, that, in the proto-language, a front vowel occurred in the root, or in one or more inflected forms. It is more likely, I believe, that, from the forms proposed here, palatalisation of *ng* before *i* in the column 2 suffix was followed in G and M by raising of *a* > *i/e* before the palatal consonant, and its subsequent spread through the paradigm.

For the Precontemporary, the weight of evidence points to *ng*, rather than *ny*, as the nasal. Conversely, while all languages except Gurr-goni have *a* as the final vowel (as we have seen before), positing *i* here would provide an environment in which the shift from *ng>ny* in Gurr-goni would be easily accounted for.

For the Contemporary suffix, Burarra and Ndjébbana both have *-ngka*. The correspondence of a homorganic nasal–stop sequence in Burarra with a geminate cluster in Gurr-goni appears in a considerable number of words (Green 1995:12); and other cognates exhibiting the same correspondences are also found between Gurr-goni and Ndjébbana. We would thus posit that an original cluster *ngk* has simplified to *ng* through deletion of the stop in Na-kara. Other probable instances of such a sound change can be found in Na-kara, though it is not unproblematic.

Table 10: **ma* 'get'

	1	2	3	4	5	6	7
		Pre	Con	IrrNPre			Fut/Imp
B *ma*		*ma-nga*	*ma-ngka*	*ma-n*			*ma-ø*
G *ma~me*		*me-nyi*	*me-kka*	*me-n*			*ma-ø*
Ndj *ma*		*má-nga*	*má-ngka*				*ma-ø*
Nkr *ma*		*ma-ngaya*	*ma-nga*			*ma-ya*	
pMan		**ma-ngi*	**ma-ngka*	**ma-n*		**ma-ya*	**ma-ø*
M	PPunct	PCon	Hab/PNeg			Pres	Imp
mi~ma	*ma-y*	*mi-nyi*	*mi-ngka-n/-p*			*mi-ø*	*mi-ø*
Ngan	PPunct	PCon	Pot	Pres	Fut	Evit	
ma~mi	*ma-y*	*ma-ngi*	*ma-ngan*	*ma-ni*	*mi-yang*	*ma-yi*	
Nu	P1	P2	Evit	NP_2	NP_1	NP_3	
ma~mi	*mi-ny*	*ma-ngi*	*ma-ngan*	*ma-ni*	*ma-ng*	*mi-ø*	
Gaag	PP	PI	Pres			Con	Fut
ma	*ma~ (ma-ki)*	*ma-ngi*	*ma-ngi*			*(ma-ki)*	*ma-ø*
AEH	PP	PI			NP		
**ma*	**may*	**manginy*			**mang*		
pArn	PP	PI	Hab/IrrP	NP1	NP2	Irr	Imp
**ma*	**ma-ny/ *miya*	**ma-ngi*	**ma-ngkan*	**ma-ni*	**ma-ng*	**ma-yi*	*ma-ø*

It is again instructive to consider other sets of cognate verbs in these languages, shown in Tables 11–13 below.

Nkr is the problem in Table 11, as the other three languages suggest pMan **pengku*. Gurr-goni *pekku ~ pekki* corresponds regularly to B and Ndj *pengka*, with the original homorganic nasal stop cluster becoming a geminate stop in G.

In Table 13, Ndj differs in having *ng*, where in Tables 10 and 11 it has *ngk*. Ndj tends to retain nasal–stop clusters (see also Tables 22, 25, 31 and 42), although there are some examples of loss of the nasal (Tables 19, 37 and part of the paradigm in Table 31). Loss of the stop is not encountered elsewhere in Ndj, leading me to posit either pMan **pungu*, with analogical influence from **pengku* leading to *pungku* in B and G, or an alternation between **pungu* and **pungku* in pMan.

Table 11: Proto Maningrida **pe ~ pengki/u (~ peku)* 'arrive, come out'

	2	3	5	7
B 'arrive, come out'	*pe-na*	*pe-ya*	*pengki-n*	*pengka*
G 'arrive, come out'	*pekki-ni*	*pekki-ya*	*pekku-n*	*pejji*
Ndj 'float'	*ppéngka-na*	*ppéngka*		*ppéngka*
Nkr 'arrive, go out'[16]	*-paka-na*	*-paka-ø*		*-paka-ø*
pMan	**pengku-ni*	**pengku-ya*	**pengku-n*	**pengki*

Kunp *pingki* 'exit', and Iwaidja and Ilgar *-wingkan* 'arrive' (PP *wingkung*, 'frustrative' *wingkana* (Evans pers. comm.)), suggest that this verb can be attributed to a much deeper level.

Table 12: Proto Maningrida **we ~ we/angku (~we/aki/u)* 'speak'

	2	3	5	7
B	*we-na*	*we-ya*	*wengki-n*	*wengka*
G	*wekki-ni*	*wekki-ya*	*wekku-n*	*wejji*
Nkr	*waka-na*	*waka-ø*		*waka-ø*
pMan	**wengku-ni*	**wengku-ya*	**wengku-n*	**wengki-ø*

Wider cognates include nominals in BGW (*wok* 'talk, language') and Kayardild (*wak* 'cry, loud speech noise'), and verbs in Pama-Nyungan languages such as Martuthunira *wangka* 'speak to', Pitjantjatjara *wangka*, Djapu *wanga* 'say, speak, talk', etc.

Table 13: Proto Maningrida **pungku~ pungu* 'fall'

	2	3	5	7
B	*pungku-na*	*pungki-ya*	*pungku-n*	*pungka*
G	*pukki-ni*	*pukki-ya*	*pukku-n*	*pujji*
Ndj	*pangó-na*	*ppo* (*ppó-nga-na* IrrPre)		*ppo*
Nkr	*pungaya-na*	*pungaya-ø*		*pungaya-ø*
pMan	**pungu-ni~ pungku-ni*	**pungu-ya~ pungku-ya*	**pungu-n ~ pungku-n*	**pungi-ø ~ pungki-ø*

Wider cognates include Martuthunira *pungka* 'fall', and Pitjantjatjara *punka* (also 'fall').

In Tables 11 and 13 we have cognates from all four languages to consider. Table 11 gives us the correspondence set B *ngk* / G *kk* / Ndj *ngk* / Nkr *k*; Table 13 shows B *ngk* / G *kk* / Ndj *ng* / Nkr *ng*. Table 12 does not have an Ndj cognate, but gives B *ngk* / G *kk* / Nkr *k*, as in Table 11. Both of these correspondence sets differ from that seen in Table 10 above (B *ngk* / G *kk* / Ndj *ngk* / Nkr *ng*).

16 The Na-kara verb is *rtijjarapaka* 'go out, arrive'; *-paka* also occurs in *rterrapaka* 'move (intr.)'.

Na-kara appears to have three, perhaps four, possible developments of Proto Maningrida homorganic nasal–stop clusters, with evidence of loss of the stop in 'get' (Table 10), 'scold' (Table 22), and 'eat, bite 2' (Table 42) and possibly 'fall' (Table 13); retention of the cluster in 'hurt' (Table 4), 'go 2' (Table 15), and 'take' (Table 29); possible loss of the nasal in 'hit' (Table 37), 'come out' (Table 11), and 'speak' (Table 12); and gemination in 'mimic' (Table 19) and 'cut' (Table 25). I would therefore suggest that, while the Na-kara forms in Tables 11 and 12 may suggest pMan **peku* and **weku*, they may also be consistent with **pengku* and **wengku*.

The B alternation of monosyllabic *pe* and *we* in the Pre and Con tenses of Tables 11 and 12 respectively, with *pengki/u* and *wengki/u* in columns 5 and 7, may be a Burarra innovation, or may have been present in pMan and subsequently lost through regularisation in the other Maningrida languages (a similar alternation is found in Ndjébbana, but not Burarra, Gurr-goni or Na-kara, with the verb 'fall' (Table 13)). The Gurr-goni column 7 forms in these tables (*pejji, wejji, pujji)* may constitute further evidence that Gurr-goni (and/or Proto Burarra/Gurr-goni) underwent palatalisation of velar stops before *i* (and perhaps also *e*; see footnote 5 above). That palatalisation has occurred is uncontrovertible. That it was conditioned by a following high front vowel requires the stem final vowel in the other TAM categories to have been other than *i* at the time of the change. Perhaps the *u* of G *wekku-n* (column 5) reflects the original vowel in columns 2, 3 and 5, which underwent assimilation to the vowel of the suffix in column 2, and fronting before *y* in column 3, after palatalisation had ceased to be productive. The Ndj form *pangó-na* (column 2) does support the hypothesis of a back vowel in stem final position in columns 2, 3 and 5 in the proto-language.

Another issue is the reconstruction of the column 3 forms. As Ndj in Table 11, and Nkr in Table 12, have zero affixation for this category, perhaps this should be attributed to the proto-language. However, *-ya-* is not a common TAM suffix in B and G, occurring on only about 7–8 verbs in each language (of a total of 400+). Moreover, while the form *pungaya* (Table 13) constitutes the stem in Na-kara, and takes zero affixation in column 3, comparison with B and G suggests that an original suffix *-ya* has been incorporated into the Na-kara stem (as appears to have happened with other verbs in Na-kara; see for example 'hit' below, §3.18). Ndj, however, has no suffix on its column 3 form *ppo*, leaving the reconstruction uncertain.

3.4.2 'get' in Proto Arnhem

For Proto Maningrida, then, we posited Precontemporary **ma-ngi*, Contemporary **ma-ngka*, **ma-n* (etc.). For column 3, we find a direct cognate of the putative Proto Maningrida **-ngka* in Mangarrayi. Ngandi and Nunggubuyu both have *-ngan*: it is not certain that **ngk > ng* is the expected development in these languages, but it is certainly a plausible one.[17] With regard to the final nasal, the situation is comparable to that for 'give', where Kungarakayn *-jen* supported a reconstruction of the final nasal in **-jan*. We have no evidence from Kungarakayn in this case, but having posited loss of final *n* from **-jan* in all

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17 We will see below other instances where a putative shift **ngk > ng* appears to have occurred in Ngandi and Nunggubuyu (see Table 18, **tha* 'put standing' and Table 23, **tho* 'chop'). However, in Table 15 **ya* 'go 2', Nunggubuyu retains *ngk*.

languages but Ngandi, Nunggubuyu and Kungarakayn, we could plausibly suggest that the same process has taken place here.

We have less evidence on which to base a reconstruction of the column 4 form, Nonpast 1. Ngandi and Nunggubuyu both have *-ni*; it is possible that the Burarra and Gurr-goni suffix *-n* derives from this (with loss of the final vowel as posited for **-jini > -jin/-jjin* in Burarra 'see', 'give', etc.). AEH reconstruct the Nonpast (i.e. Nonpast 2, column 5) as *-ng* for this verb, but reconstruct *-n* for 12 of their 21 stems; in Burarra it appears in 20 of the 28 subconjugations. It is perhaps more likely that *-n*, as the most common Nonpast 2 allomorph, has simply replaced *-ng* in B and G (it is, in fact, the only final consonant in B and G verb suffixes, apart from a few instances of *-y*), and that the Nonpast 1 form has been lost. So as far as the original shape of the Nonpast 1 suffix is concerned, we can only tentatively suggest that the Ngandi/Nunggubuyu form may be a direct reflex of it.

3.5 'go 1'

3.5.1 'go 1' in Proto Maningrida

Two verbs meaning 'go' must be reconstructed for Proto Maningrida. Burarra and Gurr-goni have reflexes only of **po* (here 'go 1'). Na-kara has two verbs, *pa* and *ya*; *pa* is the general verb 'to go',[18] and *ya* occurs in the compounds *niya* 'move towards' and *rtiya* 'move away'. Ndjébbana has merged the two verbs into one paradigm: reflexes of **po* are found in the Precontemporary and Irrealis Precontemporary tenses (the latter is shown in column 3, as it is built on the Contemporary tense form, see §3.1.3), while reflexes of **ya* (here 'go 2', §3.6 below) appear in the Contemporary and Future tenses.

Table 14: **po* 'go 1'

	1	2	3	4	5	7
		Pre	Con	IrrNPre		Fut/Imp
B *po*		*po-na*	*po-ya*	*po-ka*		*po-y*
G *po~pokV*		*poki-ni*	*poki-ya*	*po-ko*		*po-y*
Ndj *pe~po*		*pé-na*	(suppl) *ppóppa-na* IrrPre			(suppl)
Nkr *pa*		*pa-na*	*pa-ø*			*pa-ø*
pMan		**po-ni*	**po-ya*	**po-ka?*		**po-y*
Warn						*pi-ø*
D	PP	PI			Pres	
po	*pong*	*po-niny*			*po-n*	
pArn	PP	PI	Hab/IrrP	NP1	NP2	Imp
**pV*		**po-ni*				

**po* is reconstructed on the basis of B, G and the Ndj IrrPre form. The source of the front mid vowel *e* in the other Ndj form is not clear. In Na-kara *o* has shifted to *a* in the unstressed position in which it occurs, as the second element in the stem consisting of pronominal plus 'go'. (The G stem is *pokV* in all but the Imperative; the column 4 form

[18] *Pa* is unusual in that the regular pronominal prefixes are not affixed directly to it, but to a stem which is already inflected for person and/or number.

appears to have been reinterpreted as the stem.) Column 2 **po-ni* is clear; all four languages retain the suffix, with shifts in B, Ndj and Nkr of *i* > *a* as discussed in §3.1.1. As with the verbs examined above in §3.4, column 3 presents a suffix *-ya* in B and G, versus zero suffixation in Nkr (the Ndj IrrPre form *ppóppa-na* unusually involves reduplication of the root, but no overt contemporary tense suffix preceding the IrrPre *-na*). As above, I tentatively ascribe the suffixed form **po-ya* to pMan.

3.5.2 'go 1' in Proto Arnhem

Evidence for this root outside the Maningrida language is sparse. Dalabon (close to the Maningrida area) does have a clear cognate, with a corresponding column 2 form. Warndarrang, distant from both Dalabon and the Maningrida languages, has a suppletive Imperative form *pi* in the paradigm of the (highly irregular) verb 'to go', which may be cognate. However, with no cognates for the column 3 form, and without cognates in the wider group of languages for the other verbs which in Proto Maningrida have been reconstructed with a column 3 suffix **-ya*, I am unable to speculate on the rest of the paradigm.

3.6 'go 2'

Reconstruction of this paradigm is difficult for both pMan and pArn due to the extent of suppletion in many of the languages. The pMan verb **ya* can only partially be reconstructed, and then only with evidence from languages outside the group, as Na-kara and Ndjébbana agree only in the root.

Table 15: **ya* 'go 2'

	1	2	3	4	5	6	7
Ndj *yVrrV*		Pre (suppl)	Con *yirríya*	IrrNPre			Fut/Imp *yarra*
Nkr *ya*		*ye-ka*	*ye-ngka*				*ya-ø*
pMan			**ya-ngka?*				**yV-rra*
M *ya~yi*	PPunct *ya-j*	PCon *yi-nyi*	Hab/PNeg *ya-ngka-ma-n* *ya-ngka-p*		Pres *ya-k*		Imp *ya-k*
Nu	PI *(rumany)*	P2 *ya-ngki*	Evit *ya-ngkan*	NP_2 *ya-arrii*	NP_1 *(rumang)*	NP_3 *(rumi)*	
Marr	PPunct *anga*	PCon *yurra-nyi ~ (rlini)*	$Pres_3$ *(rlintu)* $Evit_3$ *yurra-nga*	$Pres_{1-2}$ *(rlintiyi* $Evit_{1-2}$*)* *yurra-ngani*	Fut *yurra-ø*	Pot *yurra-yi*	Imp *(rala)*
Warn	PPunct *inga*	PaIrr *yarni*	PaActCon *rarra*				
Kung	RPerf *yojong*	PI *yangka-rang*	NP *yangka-ø*	IrrNFut *yangke-re*			*kiya*
pArn **yV*	PP	PI **ya-ngi?*	Hab/IrrP **ya-ngkan*	NP1 **ya-ngkani?*	NP2 **yV-rra?*	Irr	Imp

Na-kara column 3 *ye-ngka* has close cognates in Mangarrayi *ya-ngka-*, Nunggubuyu *ya-ngkan* and Kungarakayn *yangka-ø*. On this evidence, we would reconstruct pArn **ya-ngkan* and pMan **ya-ngka*, with pArn final *n* and loss in pMan as in §3.1.2. (The mid-vowel *e* in the Na-kara form is probably an innovation, but it is not yet clear to what level it is to be attributed, not what conditioned it.) The Ndjébbana forms *yirríya* and *yarra* have possible cognates in Nu NP_2 *yaa-rrii* (shown here in column 3) and Marra Fut *yurra-ø* (column 5). In Marra this form appears to have been reinterpreted as the stem, appearing also in the PCon, Pres and Pot forms. The original column 3 suffix appears to have been retained (**ya-ngkan > *yu-rra-nga* with analogical spreading of *rra*, and loss of final *n* (see §3.1.2 above), and **ngk > ng* as in Table 22 below). Possibly the Marra column 2 and 4 forms also reflect pArn, with column 4 *?*yV-ngkani > yu-rra-ngani* (*ngk > ng* as in column 3), and column 2 **ya-ngi > yurra-ngi > yurra-nyi* (**ngi>nyi* as in Tables 18 and 22). However, although we can posit **yV-rra* for Proto Arnhem and Proto Maningrida, it is not clear what it encoded in either language. It does not appear at all in Mangarrayi or Kungarakayn. In Nunggubuyu, it expresses NP_2, but Nunggubuyu also has suppletion in this paradigm with a stem *rumV* in the column 1, 5 and 6 categories, so it is impossible to know what the full paradigm of **ya* in pre Nunggubuyu was (if, indeed, it was not already suppletive). Its reinterpretation as the stem in both Marra and Ndjébbana suggests the possibility that it may have expressed a category which typically has no overt suffix, such as the Imperative (where it does actually occur in Ndjébbana). Warndarrang *rarra* may possibly also be cognate, if the initial *ra* is a reflex of **ya* before the *rr* of the suffix (**ya* may have been retained in Warndarrang PaIrr *yarni*); it is probably more likely, however, that this form is cognate with the root *ru* evident in the Nunggubuyu paradigm, and the root *rli* evident in the Marra paradigm (**rV*, probably).

It is possible that a form **ya-ngi* may have existed, perhaps expressing the PI (column 2). This would be consistent with M *yi-nyi* (**-ngi > nyi* as in 'get' (Table 10), 'mimic' (Table 19), and 'scold' (Table 22)), and with Marra (**yV-ngi > yu-rra-nyi*, with the same analogical spreading of *rra* as discussed above, and **-ngi > -nyi* as in 'put standing' (Table 18) and 'scold' (Table 22). In Nunggubuyu, **ya-ngi* would normally be retained; perhaps here *ngk* has replaced *ng* by analogy with the Evit (column 3) form. The pMan column 2 form is unlikely to have been **ya-ngi*, however, at least on the evidence of Na-kara *ya-ka*; Na-kara elsewhere retains **ng*.

3.7 'reflexive'

3.7.1 'reflexive' in Proto Maningrida

An intransitivising suffix *-yi-* can be confidently posited for pMan. Its function in Gurr-goni and Ndjébbana is reflexive, reciprocal and mediopassive. In Na-kara and Burarra it is reflexive and mediopassive, while reciprocal is expressed by *-njiya* (Nkr) and *-jji-ya ~ -jjiji-ya* (B). Thus a cognate of the Proto Gunwinyguan reciprocal suffix **-nyji ~ *nhthi* also occurred in Proto Maningrida. It may have been independently inflected, or it may have been followed by **-yi* (> Nkr, B *-ya*) as it is now in Na-kara and Burarra. Certainly, no pMan paradigm can be reconstructed for **-nyji*.

All four Maningrida languages agree on the inflections for this suffix, so reconstruction is unproblematic. The paradigm resembles that for 'speak', 'fall', 'arrive' (§3.4.1) and 'go 1' (§3.5).

3.7.2 'reflexive' in Proto Arnhem

The column 2 form is again clear, **-yi-ni*. In column 3, it is possible that the M and Gaag may be cognate with pMan *-yi-ø*. Gaag *-y*, however, while clearly not taking an overt tense suffix, also occurs in the PP and the Fut tenses. M has *-yi-ma-n* in the Habitual, and *-yi-p* in the Past Negative. The same alternation, between *-ma-* in the Habitual, and *-ø-* in the Past Negative, is seen in 'go 2' (Table 15 above), 'bite 1' (Table 30), 'burn 1' (Table 33), and 'throw' (Table 34). In all of these paradigms, *-ma-* follows an overt Hab/PNeg suffix which also occurs in the PNeg (thus for example, 'throw' Hab *war-nga-ma-n*, PNeg *war-nga-m*, where the Hab/PNeg suffix is *-nga-*). Here, then, the absence of an overt suffix before the PNeg *-p/-m*, and before *-ma-n* in the Habitual, can be seen as significant, suggesting that pArn may have had **-yi-ø* in the Hab/IrrP. Ngandi and Nunggubuyu do not support this hypothesis, however, both having *-(y)i-ngun*.

Table 16: **-yi* 'reflexive'

	1	2	3	4	5	6	7
		Pre	Con		IrrNPre		Fut/Imp
B *-ya*		*-ya-na*	*-ya-ø*		*-ya-n*		*-ya-ø*
G *-yi*		*-yi-ni*	*-yi-ø*		*-yi-n*		*-yi-ø*
Ndj *yí~ya*		*-yí-na ~ -ya-na*	*-ya-ø*				*-ya-ø*
Nkr *-ya*		*-ya-na*	*-ya-ø*				*-ya-ø*
pMan **yi*		**-yi-ni*	**-yi-ø*		**-yi-n*		**-yi-ø*
M	PPunct	PCon	Hab/PNeg		Pres		Imp
-yi~-ya[19]	*-ya-k*	*-yi-ni*	*-yi-ma-n, -yi-p*		*-yi-n*		*-yi-ø*
Ngan	PPunct	PCon	Evit	Pres	Fut	Evit	
-yi~-i	*-yi-ny*	*-yi-ni*	*-yi-ngun*	*-yi-na*	*-yi-ng*	*-yi-ø*	
Nu	P1	P2	Evit	NP2	NP1	NP3	
-i	*-i-ny*	*-ii-ni*	*-i-ngun*	*-ii-na*	*-i-ny*	*-i-ø*	
Gaag	PP	PI	Pres			Con	Fut
	-y	*-yi-ni*	*-y*			*(-ya)*	*-y*
Kunp	RP	IrrP			RNP		IrrNP
-yi	*-yi-ny*	*-yi-ni*			*-yi*		*-yi*
AEH	PP	PI			NP		
	**-yiny*	**-yininy*			**-yi-n*		
pArn	PP	PI	Hab/IrrP	NP1	NP2	Irr	Imp
**-yi*	**-yi-ny*	**-yi-ni*	**-yi-ø?*		**-yi-n*		**-yi-ø*

3.8 'die/be sick'

A root **juwe* can be attributed to Proto Maningrida, with direct reflexes in Burarra and Ndjébbana. The paradigms differ, however, and it is only possible to infer that Burarra reflects the original by reference to cognates in other languages. Lacking cognates in other

19 In Mangarrayi, *-yi* alternates with *-nyjiyi* and *-jiyi* as the reflexive/reciprocal/mediopassive suffix. All inflect identically.

languages which would show evidence of the column 3 form, we cannot say what this would have been in pArn, and can only suggest that B *juwa-ya* continues Man **juwe-yi*. The paradigm would thus be similar to that for 'arrive' (Table 11), 'speak' (Table 12), 'fall' (Table 13), 'go 1' (Table 14), and 'reflexive' (Table 16). It will be remembered that alternative reconstructions for column 3 were considered (§3.4.1); the same arguments would apply here, so it is possible that Ndj continues the pMan form in column 3.

Table 17: **thOwe* 'be sick, die'

	1	2	3	5	7
B *juwa*		*juwa-na*	*juwa-ya*	*juwa-n*	*juwa-ø*
Ndj *juwe*		*yawé-la*	*jjúwa-ø*		*jjúwa-ø*
pMan **juwe*		**juwe-ni*	**juwe-yi*	**juwe-n*	**juwa-ø*
BGW	*towe-ng*	*towe-ni*		*towe-n*	
D	*to-ny*	*to-niny*		*to-n*	
Kunp	RP	IrrP		RNP	IrrNP
ju	*ju-ng*	*ju-ngi*		*ju-wa*	*ju-ng*
AEH	PP	PI		NP	
	**thOwi-ng*	**thO(wi)-niny*		**thO(wi)-n*	
pArn	PP	PI	Hab/IrrP	NP2	Imp
	**thOwi-ng*	**thOwe-ni*		**thOwe-n*	

3.9 'put standing' and *-ja/-jja* verbs

3.9.1 'put standing' and -ja/-jja *verbs in Proto Maningrida*

All four Maningrida languages have a conjugation comprising verb stems whose characteristic final syllable is *-ja* or *-jja*. Gurr-goni also has a monosyllabic verb *ja* 'put standing, erect'. The Gurr-goni paradigm for *ja* 'erect' and the *-ja/-jja* verbs is identical (given a geminate stop following monosyllabic *ja*, and a single stop following polysyllabic stems, in column 3). The paradigms for the *-ja/-jja* verbs also appear to be cognate across the four languages, and historically probably derive from compounds built on *ja* 'erect'. Thus, although only Gurr-goni retains the independent monosyllabic verb, it can be reconstructed for Proto Maningrida with some confidence. Several *-ja/-jja* verbs can also be reconstructed: shown below are **ngunyja* 'mimic, call by name' (which can be attributed to Proto Arnhem, with cognates in Mangarrayi (*ngunyja* 'imitate') and Warray (*ngunji* 'talk to each other'); **kajja* '(water) dry up', and **parnja* 'put down'.

Table 18: **ja~je* 'erect, put standing'

	1	2	3	4	5	6	7
G *ja~je* pMan **ja?*		Pre *je-nyi* **ja-ngi*	Con *je-kka* **ja-ngka*		IrrNPre *je-n* **ja-n*		Fut/Imp *ja-ø* **ja-ø*
M 'stand'	PPunct *jaj*	(suppl)	(suppl)		(suppl)		Imp *jaji*
Ngan *-tha*[20]	PPunct *-thi*	PCon *-tha-ngi*	Pot *-tha-ngan*	Pres *-tha-ni*	Fut *-tha-ng*	Evit *-tha-ø*	
Nu *-ja~* *-tha*[21]	P1 *-ji-ny ~* *-thi-ny*	P2 *-ja-ngi ~* *-tha-ngi*	Evit *-ja-ngan ~* *-tha-ngan*	NP2 *-jii ~* *-thii*	NP1 *-ja-ng ~* *-tha-ng*	NP3 *-ji-ø ~* *-thi-ø*	
Marr *yi~ja* 'tell'	PPunct *yi-ø*	PCon *ja-nyi*	$Pres_3$ *ja-nga*	$Pres_{1-2}$ *ja-ngani*	Fut *(ninguy)*	Pot *ja-yi (~ ninguyi)*	Imp *ya-ø*
R *ta*	PP *ta-ya*	PI *ta-nginy, ta-ny*			NP *ta-ngan*		
BGW *ta*	PP *ta-nginy*	PI *ta-ny*			NP *ta-ngen*		
AEH	PP **thanginy*	PI **thany*			NP **thangen*		
pArn **tha*	PP **tha-ny*	PI **tha-ngi*	Hab/IrrP **tha-ngkan*	NP1	NP2 **tha-ng*	Irr	Imp

Table 19: **ngunyja* 'mimic, call by name'

	1	2	3	5	7
		Pre	Con	IrrNPre	Imp/Fut
B *ngunyja*		*ngunyji-nga*	*ngunyji-nga*	*ngunyji-n*	*ngunyja-ø*
G *ngujja*		*ngujji-nyi*	*ngujji-ka*	*ngujji-n*	*ngujja-ø*
Ndj *ngoja*		*ngója-nga*	*ngója-ø*		*ngója-ø*
Nkr *ngojja*		*ngojja-ngiya*	*ngojja-nga*		*ngojja-ø*
pMan		**ngunyja-ngi*	**ngunyja-nga*	**ngunyja-n*	**ngunyja-ø*
M *ngunyja*	PPunct *ngunyja-nyi*	PCon *ngunyja-nyi*	Hab/PNeg *ngunyja-ngka-n/-p*	Pres *ngunyja-k*	Imp *ngunyja-k*
Kunp *ngunyje* 'do'	RP *ngunta*	IrrP *(ngunta)*		RNP *ngunyje-ø*	IrrNP *ngunyja-ng ~ ngunyje-ø*
Warray *ngunji*	R *ngunji-yi*	Imperfective *ngunji-nyiny*		Irr *ngunji-ny*	Imp *ngunji- ø*
pArn **ngunyja*	PP	PI **ngunyja-ngi*	Hab/IrrP **ngunyja-ngkan*	NP2	Imp **ngunyja-ng*

[20] Ngandi has two thematising suffixes, *-tha* (shown here) and *-thu* (with an identical paradigm; only the vowel differs).

[21] Heath (1984:418) notes 'we can identify /*-ja-*/ or /*-tha-*/ ... as a minor derivational suffix', and (1984: 417) 'this [inflectional] class consists largely of stems which historically contain a kind of thematising augment'.

Table 20: **kajja* '(water) dry up/(tide) go out'

	2	3	5	7
	Pre	Con	IrrNPre	Imp/Fut
B *kajja*	*kajji-nga*	*kajji-nga*	*kajji-n*	*kajja-ø*
G *kajja*	*kajji-nyi*	*kajji-ka*	*kajji-n*	*kajja-ø*
Ndj *kaja*	*kkája-nga*	*kkája-ø*		*kkája-ø*
pMan	**kajja-ngi*	**kajja-nga*	**kajja-n*	**kajja-ø*

Table 21: **parnja* 'put down 1'

	2	3	5	7
	Pre	Con	IrrNPre	Imp/Fut
B *parnja*	*parnji-nga*	*parnji-nga*	*parnji-n*	*parnja-ø*
Ndj *panyja*	*ppányja-nga*	*ppányja-ø*		*ppányja-ø*
Nkr *parnya*	*parnya-ngiya*	*parnya-nga*		*parnya-ø*
pMan	**parnja-ngi*	**parnja-nga*	**parnja-n*	**parnja-ø*

The suffixes are similar to those for **ma* 'get' (Table 10 above). In column 2, B *-ja-nga*, G *je-nji/-ji-nyi*, Ndj *-ja-nga* and Nkr *-ya-ngiya* again suggest pMan **(-)ja-ngi*. **-ngi* > *nyi* in Gurr-goni was discussed above at §3.4.1. In Na-kara, **-ngi* has given rise here to *-ngiya*, while in Table 10 the reflex of the same putative proto-form is *-ngaya*. Neither is completely regular, apparently having undergone additional suffixation with *-ya*.

The form of the monosyllabic root in the column 3 form in Gurr-goni is *je-kka*, with a geminate stop. Without any other evidence for **ja* 'erect', we would be justified in positing **ja-ngka* for pMan, by analogy with **ma-ngka* (Table 10).

For the polysyllabic stems, however, the issue is not so clear. Na-kara *-nga* (as in *ngojja-nga*) would appear to be compatible with pMan **-ngka* or **-nga* (see §3.4.1 above for discussion of the apparent reduction of **ngk* > *ng* in Na-kara). There is no evidence for the same change in Burarra, however, and Burarra *-nga* plausibly derives only from *-ngV*. I therefore posit pMan **-nga* (**ngunyja-nga, *parnja-nga, *kajja-nga*, etc.), retained in both Burarra and Na-kara. Ndjébbana *-ø* is obviously not a regular development. In Gurr-goni, **-nga* would then have hardened to *-ka* (as in *ngujji-ka*). The full evidence of the Gurr-goni verbal system shows that this has occurred following a non-homorganic stop (geminate and single *rt, j, t, p*) in the last syllable of the stem, while *-nga* remains following a nasal, homorganic stop (*k* or *kk*), or the glide *w* in the same position in the preceding stem. However, I have suggested above that **-ngi* > *-nyi* in Gurr-goni, and below posit **-ngu* which remains in Gurr-goni; the latter particularly is a problem for this reconstruction.

Reconstruction of the stems **kajja* and **parnja* appears fairly clear. Reduction of *jj* > *j* in Ndj was noted above in §3.1.1. Lenition of *j* > *y* (**parnja* > *parnya*) in Nkr is consistent with observation of intervocalic lenition, also in §3.1.1. Retroflexes appear to have been unstable in Ndjébbana: pMan **kornta* 'cut' becomes *konyja* in Ndj (see §3.11 below) and pMan **pu-rnta* appears to have become *ppúra* in Ndj (see §3.18 below).

In Ndjébbana, the *o* in *ngója* appears to be an independent innovation, as the intransitivised form is *ngújeyi* (perhaps retaining the older form). However, while reconstruction of **ngunyja* is supported by cognates in Mangarrayi, Kunbarlang and Warray

(and Ngandi and Nunggubuyu both have particles *ngunyju* 'same', which could be either retentions or, possibly, loans), the expected development of *nyj* in Ndjébbana is either *nyj* or *y*, with no evidence of *nyj* > *j* (but see 'lift up' (Table 31), where a homorganic nasal–stop cluster appears in the Imp *nyémpa*, while the Pre *nyapé-la* and Con *nyapo* have a single stop); and in Na-kara *nyj* becomes *nyj* or *ny*, with no evidence of *nyj* > *jj* (although **kornta* becomes *kortta* in Na-kara). These forms appear to be cognate, but I am unable to fully reconcile them.[22]

3.9.2 'put standing' and -ja *verbs in Proto Arnhem*

Although wider cognates are found for only one of the *-ja* verbs, **ngunyja*, reconstruction of the column 2 and 3 forms is fairly clear. Column 2 **ngunyja-ngi* becomes *nyunyja-nyi* in Mangarrayi, with *ng* > *ny* as in **ma-ngi* > *mi-nyi*, Table 10 above, and **thO-ngi* > *ju-nyi*, Table 22 below. Warray *ngunyja-nyiny* would appear to involve the same change, plus epenthesis of the final *ny*, as discussed in §3.1.2. In column 3, both pMan and Mangarrayi have direct reflexes of the posited pArn **ngunyja-nga*. In the Imperative, M *ngunyja-k* and Kunp *ngunyja-ng* suggest pArn **ngunyja-ng* (with regular hardening of the final nasal in Mangarrayi). The Mangarrayi form is both an Imperative and a Present tense form; the Kunbarlang one an Irrealis 1. Present tense in Mangarrayi continues NP2, and it is possible that this was not originally an Imperative (**tha-ng* is reconstructed for NP2 in the paradigm of the monosyllabic root). The limited evidence does not allow reconstruction of other TAM categories, however.

Reconstruction of the monosyllabic root is less clear. As AEH note, few languages have retained reflexes of both **tha* 'put standing' and **thi* 'be standing' (§3.12 below) as distinct verbs. Gurr-goni is the only one of the Maningrida languages to have done so. Among the wider group of languages Rembarrnga and BGW retain both, and Marra may do so. The Marra verb shown above means 'tell'; semantically it is thus closer to pArn **thO* 'scold, tell off', while Marra *ju* 'causative auxiliary' is semantically closer to **tha* 'put standing', while the vocalism suggests the opposite.[23] The Marra paradigms are almost identical, except for the vocalism; *ju* 'causative aux' is shown in Table 22 below. Marra also has a cognate of **thi* 'be standing', *ya~yi~yu*, shown in Table 27 below. Ngandi and Nunggubuyu have

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22 It is possible that this verb could be a loan in one or more languages. There are clear cases where what could be called the lexical root of a verb, preceding a thematising suffix, is borrowed between languages: one example involves the Gurr-goni words *pengrtayja* 'be reminded of' and *pengrtaykinmi* 'let someone know'. *Peng* is a BGW nominal meaning 'faculty of understanding, cognition'; it has no independent meaning in Gurr-goni. BGW also has verbs *pengtayhme* 'be reminded of' and *pengtayhke* 'let someone know'; Gurr-goni has not borrowed the thematising suffixes *hme* and *hke*, but has used its own (*ja* and *kinmi*). It is thus necessary to consider sound correspondences and etymology when determining whether shared verbs are shared inheritance or borrowings. In my earlier paper, I posited several verbs for Proto Maningrida which I now believe more probably involve borrowing of the lexical roots (B/G *rorrjja*, Ndj *rórrajja* 'clear up, clean' and B *rarraya* 'empty, clean out', Ndj *rarrma* 'be clean, white' do not show the sound correspondences exhibited by reflexes of such verbs as **ra* 'spear' (B/G *rra*, Ndj *ra*, Table 6 above) and **yo-ri* 'lie-Con' (B *yu-rra*, G *yo-rri*, Ndj *yó-ra*, Table 26 below).

23 Gavan Breen (pers. comm.) has pointed out that in other Australian languages, for example Arrernte, a verb 'tell' is used as a causative. While development of *tell (off) > causative in Marra thus has parallels, Marra appears to have also undergone an opposite shift from an inherently causative verb 'put standing' to 'tell'.

thematising suffix or derivational suffixes *tha (~-ja)*, as well as independent verbs *thi* (Ngan) and *lha* (Nu) 'be standing'. In other languages, the paradigms of **tha* and **thi* were merged, or one was lost. Forms with *a* vocalism that appear to be reflexes of **tha* are shown in Table 18 above.

Mangarrayi, which had identical PPunct and PCon (column 1 and 2) forms for *nguny-ja* above, here has a suppletive stem *jayki* for all categories except PPunct and Imp. The column 1 form *jaj* would suggest pArn **thany*: Nu has *-thiny ~ -jiny*, and *tany* is found in R and BGW, but in the PI category (usually cognate with column 2). Mangarrayi provides no evidence for column 2; pMan **ja-ngi* (G *je-nyi*) is a clear cognate of Ngan and Nu *-tha-ngi (~ -ja-ngi* Nu*)* and R *ta-nginy*, and of Marra *ja-nyi* (with **-ngi > -nyi* as in Table 15 above, and Table 22 below), suggesting **tha-ngi*. AEH, however, posit **thanginy* for the PP (= my column 1) and **thany* for the PI (my column 2). We at least agree on the forms; to which category they are to be assigned is debatable, as there have clearly been shifts in the daughter languages. For column 3, pMan **ja-ngka* (G *je-kka*), Ngan and Nu *-tha-ngan* and Marr *-ja-nga* point to **tha-ngkan*, with changes as in §3.4.2, §3.6 and §3.10. For column 4, however, the dissimilarity of forms makes reconstruction difficult. In column 5, as with 'get' §3.4.2, we find suggestions of **tha-ng* in pArn; pMan (or at least Proto Burarra/Gurr-goni) has replaced the final velar nasal with *-n*, the only nasal to occur finally in the verb suffixes.

3.10 'chop', 'scold' and 'burn 1'

Three other verbs for which a column 3 Habitual/Past Irrealis suffix **-ngka(n)* can be reconstructed are **thO* 'scold, growl at' (with reflexes in the Maningrida languages, Mangarrayi and Marra), **tho* 'chop' (with reflexes in Ngandi and Nunggubuyu), and **rO* 'burn 1' (with reflexes in Burarra, Gurr-goni, BGW and Ngalakgan). Reconstruction of these paradigms is unproblematic, with (fairly) regular sound changes in all languages (Nakara column 2 *jo-ngaya* is not completely regular, in that it involves the addition of a syllable; see §3.4.1 above for another instance of this). The root vowel of 'scold' and 'burn 1' is not clear, however. Proto Maningrida has **jo* 'scold' and **ro* 'burn 1', while reflexes of these verbs in the languages examined by AEH show *u* or *i* as the root vowels. Mangarrayi *ju-* could reflect either **thu* or **tho*: as AEH (this volume) note, mid-vowels do not occur in closed word classes in Mangarrayi, and '[c]onsequently, the *u* vowel in the Mangarrayi forms may be analysed as having replaced an original **o* vowel'. Marra and Warndarang both have only three vowels, and may have undergone a similar change to Mangarrayi. As in Table 3, I therefore represent this proto-phoneme as **O*, pending further research into the historical phonology of these languages.

Table 22: **thO* 'scold, tell off'

	1	2	3	4	5	6	7
		Pre	Con		IrrNPre		Imp/Fut
B *jo*		*jo-nga*	*jo-ngka*		*jo-n*		*jo-ø*
G *jo*		*jo-ngu*	*jo-kka*		*jo-n*		*jo-ø*
Ndj *-jjo~-ya*		*jjó-nga*	*jjó-ngka*				(suppl)
Nkr *jo*		*jo-ngaya*	*jo-nga*			*(kuya)*	
pMan **jo*		**jo-ngi*	**jo-ngka*		**jo-n*		**jo-ø*
M	PPunct	PCon	Hab/PNeg		Pres		Imp
ju	*ju-j*	*ju-nyi*	*ju-ngka-n/-p*		*ju-k*		*ju-k*
Marr[24]	PPunct	PCon	$Pres_3$	$Pres_{1-2}$	Fut	Pot	Imp
ju~ji	*(ji-ø)*	*ju-nyi*	*ju-ngu*	*ju-nguni*	*(ju-ø)*	*ji-yi*	*(ji-rli)*
Warn	PPunct	PIrr	P/FutCon				
ja~ji	*(ja-ø)*	*(ji-ø)*	*ja-nga*				
AEH	PP	PI			NP		
	**thuny ~ *thuy*	**thunginy*			**thung*		
pArn	PP	PI	Hab/IrrP		NP2	Irr	Imp
**thO*	**thO-ny*	**thO-ngi*	**thO-ngkan*		**thO-ng*		**thO-ng?*

Table 23: **tho* 'chop'

	1	2	3	4	5	6
Ngan	PPunct	PCon	Pot	Pres	Fut	Evit
	tho-ng	*tho-ngi*	*tho-ngan*	*tho-ni*	*tho-ng*	*tho-yi*
Nu	P1	P2	Evit	NP2	NP1	NP3
	lhi-ny	*lha-ngi*	*lha-ngan*	*lha-ni*	*lhi-ny*	*lhii*
AEH	PP	PI			NP	
**tho*	**thoy*	**thonginy*			**thong*	
pArn	PP	PI	Hab/IrrP	NP1	NP2	Irr
**tho*	**tho-ny*	**tho-ngi*	**tho-ngkan*	**tho-ni?*	**tho-ng*	**tho-yi*

Table 24: **rO* 'burn 1'

	1	2	3	5	7
		Pre	Con	IrrNPre	Imp/Fut
B *rro*		*rro-nga*	*rro-ngka*	*rro-n*	*rro-ø*
G *rro*		*rro-ngu*	*rro-kka*	*rro-n*	*rro-ø*
pMan **ro*		**ro-ngi*	**ro-ngka*	**ro-n*	**ro-ø*
	PP	PI		NP	
BGW	*ru-yi*	*ru-ngi*		*ru-ng*	
Ngal	*ru-ny*	*ru-nginy*		*ru-nga*	
pArn	PP	PI	Hab/IrrP	NP2	Imp
**rO*		**rO-ngi*	**rO-ngkan*	**rO-ng*	

24 As noted above (§3.9.2), this is a causative auxiliary.

3.11 'cut'

3.11.1 'cut' in Proto Maningrida

The paradigm of 'cut' is the same as that for 'mimic', 'dry up', and 'put down 1', Tables 19–21, in all languages except Gurr-goni. There **-ngi* became *-nyi* (**ngunyja-ngi* > *ngujji-nyi*, **kajja-ngi* > *kajji-nyi*); here, following a root in which the stressed vowel is *o*, **ngi* > *-ngu*, with the vowel of the suffix assimilating to the preceding stressed vowel, rather than the consonant assimilating to the following vowel (obviously, **-ngi* > *-ngu* must have preceded **-ngi* > *-nyi*, or the form G here would be *korntu-nyi)*.

Table 25: **kornta* 'cut'

	1	2	3	5	6	7
		Pre	Con	IrrNPre	Fut	Imp/Fut
B *kornta*		*kornta-nga*	*kornta-nga*	*kornta-n*		*kornta-ø*
G *kornta*		*korntu-ngu*	*kornta-ka*	*kornti-n*		*kornta-n*
Ndj *kónyja*		*kkónyja-nga*	*kkónyja-ø*			*kkónyja-ø*
Nkr *kortta*		*kortta-ngiya*	*kortta-nga*			*kortta-ø*
pMan		**kornta-ngi*	**kornta-nga*	**kornta-n*		**kornta-ø*
M	PP	PCon	Hab/PNeg	Pres		Imp
	kunta-ni	*kunta-ni*	*kunta-ya-n/-p*	*kunta-n*		*kunta-w*
pArn	PP	PI	Hab/IrrP	NP2	Irr	Imp
**kornta*				**kornta-n*		

The root is clearly **kornta*. The development in Ndjébbana to *konyja* may be partly due to analogical pressure from other verbs in the conjugation, many of which have *-ja* as the final syllable. In Gurr-goni, most homorganic nasal–stop clusters become geminate stops, but retroflex clusters appear to be an exception: *rnt* is also retained in *pu-rnti* 'hit-Con' (Table 37). On the other hand, gemination is not the norm in Na-kara (although it is not actually clear what regular development of such clusters is in Na-kara; see §3.4.1 above). **ngunyja* > *ngojja* 'mimic' is another instance where gemination appears to have occurred.

3.11.2 'cut' in Proto Arnhem

Mangarrayi is the only language examined here in which an apparent cognate of pMan **kornta* is found. As noted in §3.10 above, *u* in Mangarrayi inflecting verbs could derive from **o* or **u*, and I have posited **o* as the root vowel here in the absence of any evidence to the contrary. There are problems, however, as the root does not have a retroflex cluster as would be expected (compare pArn **pu-rnti* 'hit-Hab/IrrP' > pMan **pu-rnti*, M *pu-rnta* (Table 37 below), and the column 2 and column 3 inflections are not cognate. As cognate roots are also found in Pama-Nyungan languages (for example Martuthunira *wurnta* 'cut'), there is no doubt that it can be attributed to pArn, most likely with a retroflex cluster (**kornta*), but without further evidence we cannot reconstruct the paradigm.

3.12 'lie', 'be standing', 'sit'

3.12.1 'lie', 'be standing' and 'sit' in Proto Maningrida

Table 26: **yo* 'lie'

	1	2	3	4	5	6	7
		Pre	Con		IrrNPre	Fut	Imp/Fut
B *yu*		*yu-ø*	*yu-rra*		*yu-ngin*		*yu-ø*
G *yu~yo*		*yu-y*	*yo-rri*		*yu-ngu*		*yu-ø*
Ndj *yo*		*ya-ø*	*yó-ra*				*ya-ø*
Nkr *yu*		*yu-na*	*yu-rta*			*yu-nya*	
pMan *yu~yo*		**yu-y*	**yo-ri*		**yu-ngV*	**yu-nya*	**yu-ø*
M	PP	PCon	Hab/PNeg		Pres		Imp
yu	*yu-j*	*yu-nyi*	*yu-ra-n/-p*		*(yu-ø)*		*yu-ø*
Ngan	PP	PCon	Pres	Pot	Fut	Evit	
yo	*yo-nginy*	*yo-y*	*yu-rta*	*yo-ngini*	*yi-nyang*	*yo-ngi*	
Nu	P1	P2	NP2	Evit	NP1	NP3	
yi~ya	*yi-ngany*	*ya-y~yi*	*ya-ra*	*(ya-n)*	*yi-ngang*	*yi-ngi*	
Gaag	PP	PI	Pres			Con	Fut
yu~yo~jo	*(jo-kori)*	*(jo'ree-ni)*	*yu, yo-ri*			*(jo'reeya)*	*yu*
R	PPunct	PCon	Pres		Pres		
yu~yi~ ya	*yu-wa*	*(yi-nganiny) ~ yuweny*	*yu-ru*		*ya-ngan*		
Kung	RPerf	PI	NP	IrrNonFut			
yu~yo	*yu-nguny*	*(yungyung)*	*(yo-po)*	*yu-ngene*			
Kunp	RP	IrrP			RNP		IrrNP
	yu-ngany	*yu-ngi*			*yu-wa*		*yu-ng~yu*
AEH	PP	PI			NP		
	yonginy	*yoy*			*yu*		
pArn	**PP	**PI	**Hab/IrrP	**NP1	**NP2	Irr	Imp
	**yo-nginy*	**yo-y*	**yo-ra*	**yo-ngini*	**yu-ng?*		**yu*

Some variation occurs in the vowels of the roots, both within and between the languages, and it appears that variation must be reconstructed for the proto-languages.

For 'lie' (Table 26), *yu* predominates, but both Gurr-goni and Ndjébbana also show *yo* in some categories (perhaps significantly, in the Contemporary tense in both languages). *Ya* also occurs in Ndjébbana, but can be derived via the general rule of shifting unstressed vowels to *a*. We would probably be justified in reconstructing **yo* in Contemporary tense, **yu* elsewhere; note that AEH also reconstruct forms in both *yo* and *yu* for their 'Proto Gunwinyguan', though distributed differently over TAM categories.

For 'be standing' (Table 27), *ji* predominates in Burarra, Gurr-goni and Na-kara, but Gurr-goni also has *je* in two tenses (Contemporary, and Irrealis Non-Precontemporary, column 5). Na-kara has suppletive forms for both the Contemporary and the Imperative. Lacking evidence from Ndjébbana, which does not have a cognate, we would certainly posit *ji* as the major root form, with a possible variant *je* in Contemporary tense.

Table 27: **thi~*thu* 'be standing'

	1	2	3	4	5	6	7
		Pre	Con		IrrNPre		Imp/Fut
B *ji*		*ji-ø*	*ji-rra*		*ji-ngin*		*ji-ø*
G *ji~je*		*ji-ø*	*je-rre*		*je-ngu*		*ji-ø*
Nkr *ji~ja*		*ji-na*	*(kakaya)*			*ja-nya*	
pMan **ji~je*		**ji*	**je-ri~ji-ri*		**je-ngV~ ji-ngV*	**ji-nya*	**ji-ø*
Ngan *thi~thu~tho*[25]	PPunct *-thi-nginy*	PCon *-thi-ø*	Pres *-thu-rta*	Pot *-tho-row*	Fut *-thi-nyang*	Evit *-thi-ngi*	
Nu *lha*	PI *lha-ngany*	P2 *lha-y, lhi*	NP2 *lha-ra*	Evit *lha-n*	NP1 *lha-ngang*	NP3 *lha-ngi*	
Marr *yaV ND~jV D~jV*	PPunct *ya-nga*	PCon *yi-nji*	$Pres_3$ *yu-rlu*	$Pres_{1-2}$ *yu-rliyi*	Fut *ya-na*	Pot *yi-njiyi*	Imp *ya-ø*
Warn	PP ___	PIrr *(jayarni)*	PaActCon *jura*				
Gaag *ji*	PP *ji-ngi*	PI *(ji-ngi)*	Pres *ji, ji-ri*		Con *(ji-ngi)*		Fut *ji*
R *ti~ta~tu*	PPunct *ti-yi*	PCon *ta-ny, (ti-nganiny)*	Pres *tu-ru*		Pres *ta-ngan*		
Kung	RPerf *jo-ngony*	PI *(ji-ng-ji-ng)*	NP *(ja-po)*	IrrNonFut *jo-pere*			
Kunp	RP *ja-ngany*	IrrP *ji*			RNP *ja*		IrrNP *ji~ja- ng*
AEH	PP **thi*	PI **thiny*			NP **thi*		
pArn	PP **thi*	PI **thi-ny*	Ha/IrrP **thu-ra, *thi-ri?*	NP1 **thu-rlV*	NP 2 **thi ~?*	Irr	Imp **thi*

'Sit' (Table 28) shows even more variation. *Ni* predominates across all four languages. Ndjébbana, apart from unstressed *na*, has *no* in Contemporary tense, where Gurr-goni has *ne*. Given only internal evidence for Proto Maningrida, we would be justified only in positing a central vowel in Contemporary tense, and **ni* elsewhere. However, the widespread occurrence of cognate forms in column 3 with *rnu* and *nu* could be seen as evidence that a root variant **no* occurred in Proto Maningrida in Contemporary tense.

The Contemporary tense forms are plausibly reconstructed as **yo-ri*, **je-ri* (or **ji-ri*) and**no-ri* (or, possibly, **ne-ri*), although we must not forget the possibility that Gurr-goni has innovated its final vowels (see discussion in §3.1.1), and that pMan had **yo-ra*, **je-ra* and **no-ra*. The correspondence set B/G *rr*, Ndj *r* and Na-kara *rt* has already been seen in Table 6, **ra* 'spear'. Here, it is expanded, as cognates are found in more of the languages under consideration: M *r*, Ngandi *rt*, Marr *rl*, Warndarrang *r*, and Rembarrnga *r*. Considering only the Maningrida languages, other reconstructions of this proto-phoneme

25 This root in Ngandi is the final syllable of the verb 'stand', *jakathu*.

would certainly be possible. Consideration of the wider picture, where *r* is the most common reflex of this proto-phoneme, tips the balance in favour of *r*, however.

Table 28: **ni~nu* 'sit'

	1	2	3	4	5	6	7
		Pre	Con		IrrNPre	Fut	Imp/Fut
B *ni*		*ni-ø*	*ni-rra*		*ni-ngin*		*ni-ø*
G *ni~ne*		*ni-ø*	*ne-rre*		*ni-ngu*		*ni-ø*
Ndj *no*		*na-ø*	*nó-ra*				*na-ø*
Nkr *ni*		*ni-na*	*ni-nta*			*ni-nya*	
pMan **ni~no*		**ni-ø*	**no-ri ~ *ni-nta*		**ni-ngV*	**ni-nya*	**ni-ø*
M *rni~rnu*	PP *rni-ny*	PCon *rni-ø*	Hab/PNeg *rnu-ra-n/-p*		Pres *rni-ø*		Imp *rni/rni-k* 2s
Ngan *rni~rnu~rno*	PPunct *rni-nginy*	PCon *rnii*	Pres *rnu-rta*	Pot *rno-row*	Fut *rni-nyang*	Evit *rni-ngi*	
Marr *a~wu*	PPunct ____	PCon *a-nji*	$Pres_3$ *wu-rlu*	$Pres_{1-2}$ *wu-rliyi*	Fut *a-nu*	Pot *(a-njiyi)*	Imp *(a-ø)*
Warn	PP ___	PIrr ___	PaActCon *nura*				
Gaag *ni*	PP *ni-ngi*	PI *ni-ngi*	Pres *ni, ni-ri*			Con *ni-ngi*	Fut *ni~ngani*
R *ni~nu~na*	PPunct *ni-yi*	PCon *ni-nganiny*	Pres *nu-ra*		Pres *na-ngan*		
Kung	RPerf *ni-nginy*	PI *(ningning)*	NP *(no-po)*	IrrNonFut *no-pere ~ (no-pene)*			
Kunp	RP *rni-ngany*	IrrP *rni-ø*			RNP *rna*		IrrNO *rni~rni-ng*
AEH **ni*	PP **ninginy*	PI **niny*			NP **ni*		
pArn **ni~nu*	PP **ni-nginy*	PI **ni-ny*	Hab/IrrP **nu-ra*	NP1 *nu-rlV*	NP 2 **ni ~?*	Irr **ni-ngi?*	Imp **ni-ng?*

Na-kara *ni-nta* is unexpected, and not currently accounted for. It should perhaps be attributed to the proto-language as a variant form for Contemporary tense.

Precontemporary forms in Na-kara show a suffix *-na*, but the other three languages have zero affixation in this tense for 'stand' and 'be sitting'. As *-na* is the most common Precontemporary allomorph in Na-kara, it is plausible to suggest that analogical extension has occurred here in Na-kara. Only Gurr-goni has a suffix for Precontemporary 'lie': *yu-y*. Such a form is found nowhere else in the Gurr-goni verbal inflectional paradigm, and it would be difficult to suggest an internal source for it. I would thus propose **yu-y*, **ni* and **ji*.

Among the Irrealis forms, Burarra and Gurr-goni unusually do not agree on the column 5 (*Nonpast 2) form: Burarra *yu-ngan, ji-ngan, ni-ngan*; Gurr-goni *yu-ngu, je-ngu, ni-ngu*. A basic sequence *jVngV*, etc., is likely. Positing a final *n* for Proto Maningrida (*jVngVn*, etc.), would require its loss in Gurr-goni; as this has not happened in other cases such as the

Nonpast 2 suffix **-jin* for 'see' and 'give' (see §3.1.1), it may be more plausible to suggest that Burarra has added a final *n* here by analogy with the 'see', 'give' conjugation.

3.12.2 'lie', 'be standing' and 'sit' in Proto Arnhem

These verbs are among the most exciting in relation to Proto Arnhem Habitual/Irrealis/Past (column 3) and Nonpast 1 (column 4), for it is here that we find reflexes — of column 3, at least — in a central Gunwinyguan language (Rembarrnga), and in languages in which the evidence of shared irregularities in the verbal paradigms examined so far is debatable: Gaagudju (which has cognates in column 3 for all three verbs), and Warndarrang (which has cognate forms for 'sit', *nura,* and 'stand', *jura*). In Rembarrnga and Gaagudju, the cognates are variant forms of the present tense; in Warndarrang *nu-ra* and *ju-ra* encode Past and Future Continuous (in paradigms lacking past punctual tense forms).

Although it is tempting, comparing Gurr-goni *yo-rri* and Gaagudju *yo-ri* in column 3, Table 26, to reconstruct **yo-ri* at the level of Proto Arnhem, the Mangarrayi, Ngandi and Nunggubuyu cognates have final *a*. These languages do show *i* as a reflex of putative **i* in the equivalent position in other paradigms (see for example column 2, Tables 2 and 3). We have already noted cases where Gurr-goni appears to have innovated final vowels other than *a* (see Tables 2 and 3, column 3). We have little evidence of the development of **a* in Gaagudju verbal suffixes: in column 3, Tables 3 and 6, the putative proto-forms **wO-jan* and **ra-jan* reduce to *wo-y* and *(pa)ra-y*, respectively, in Gaagudju. In Table 10, where the pArn column 2 and 3 forms are proposed as **ma-ngi* and **ma-ngkan* respectively, Gaag appears to have replaced the original column 3 form with the column 2 form (retained as *ma-ngi*). We therefore have no information about the phonological development of penultimate **a* here. The most likely final vowel, then, is *a*, with innovation in both Gurr-goni and Gaagudju. Rembarrnga final *u* in Tables 26 and 27 would also appear to be an innovation, but one which does not occur in Table 28. Marra has also developed final *u* for 'stand' and 'sit' (there is no cognate for 'lie').

**yo-ra*, then, is a possible reconstruction, although we must also consider **yu-ra*. Mangarrayi shows *yu-ra*, but Harvey (this volume, Chapter 8) describes the loss of central vowels in verb roots and other closed word classes in Mangarrayi, including instances of putative **o > u*. This could be an additional example of such a shift. Rembarrnga has *yu-ru*, and Ngandi has *yu-rta*.[26] The only instances of **o > u* noted by Harvey (this volume, Chapter 8) for Rembarrnga involve vowel breaking (so the actual shift is **o > uwa*). This has not occurred here, although it probably has in the column 1 (Past Perfective?) form *yuwa*. In Ngandi, the root vowel is predominantly *o*, with *u* occurring only in this category (the opposite pattern, in fact, from that proposed for pMan). It seems likely that pArn exhibited an alternation between **yu* and **yo* within the paradigm, and that different realisations of this (and other) vocalic alternations in the daughter languages result from paradigmatic reanalysis.

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[26] It appears that we do not find cognates of the column 3 suffix in Ngandi and Nunggubuyu Potential and Evitative, as was the case with verbs previously examined, but that the cognate forms appear in the Present and NP2 categories. (Ngandi Present and Potential and Nunggubuyu Evitative and NP2 exponents are similar in many verbs.)

For 'be standing' in column 3, we have a predominance of *u* in the root: Ngandi *thu-rta*, Marra *ju-rlu*, and Rembarrnga *tu-ru*, compared with Proto Maningrida **ji-ri~je-ri*, Gaagudju *ji-ri* and Nunggubuyu *lha-ra*. We can again posit an initial *r* in the suffix, thus **thu-ra* (or possibly **thu-ri*) (and perhaps a variant form **thi-ri*). *r* is retained in Proto Maningrida, Proto Ngandi/Nunggubuyu, Rembarrnga and Gaagudju. In Marra, the original central continuant **r* becomes a lateral continuant *rl*. The later shifts in the Maningrida languages are described above; Ngandi also shifts **r > rt* after its split from Nunggubuyu.

For 'sit' in column 3, the picture is less clear. Again, there is a predominance of *u* in the root: Ngandi *rnu-rta*, Warndarrang *nu-ra*, Rembarrnga *nu-ra*, Mangarrayi *rnu-ra* (although this may reflect an original **rno*; cf. the discussion of 'lie' above). Gaagudju alone has *ni-ri*, while Proto Maningrida may have **no-ri ~ *ni-nta*. As Ngandi apparently does not otherwise show a shift **o > u*, perhaps **nu-ra* (and/or **nu-ri*) is the most plausible reconstruction. (The Marra root *a~wu* may not be cognate at all; the column 3 suffix *-rlu* does appear to be, however.)

In column 4, the picture is even more confusing. For 'lie' we have Ngandi *yo-ngini*, Nunggubuyu *ya-n*, and Kungarakayn *yu-ngene*. **yo-ngini* may be posited here. For 'be standing', the forms to be compared are Ngandi *tho-row*, Nunggubuyu *lha-n* and Marra *ju-rliyi*. Again, the Nunggubuyu form is clearly not cognate. It is not clear that the Ngandi and Marra forms are either. We have a correspondence between Ngandi *rt* and Marra *rl* in Tables 27 and 28 (column 3); here, we have Ngandi *r* and Marra *rl*, and a problem with the final segment, *-ow* in Ngandi and *-iyi* in Marra. The same suffixes, and the same problems, are found with the Ngandi and Marra column 4 forms for 'sit'. The correspondence of Ngandi *r* and Marra *rl* is also found in another verb, 'eat, bite 1' (**pa-rli* > Ngan *pa-ri*, Marr *paynga-rli*), where it is reconstructed as **rl*, with cognate forms in other languages providing more evidence for the reconstruction (see Table 30 below). This suggests a tentative reconstruction here of Proto Arnhem **thu-rlV*, **nu-rlV*.

In column 5, many languages have forms of the shape *CV-ng(V)(N)* for all three verbs. AEH (this volume) suggest that this is an analogical extension from NP **tha-ngen* 'stand-change of state'. This may well be the case; in §3.9.1 above, I posit **tha-ng* for the NP2 of 'put standing'. It is intriguing, however, that while Gurr-goni has *je-n* for 'put standing' in column 5 (explicable as *-n* is the most common column 5 suffix), the Burarra and Gurr-goni forms for 'be standing', 'sit' and 'lie' are all *CV-ngV(N)*; we would thus have analogical pressure from the 'change of state' verb influencing the three postural state verbs, while the source of that pressure is then lost to analogical pressure itself.

3.13 'take'

Table 29: **ka* 'take'

	1	2	3	4	5	6	7
		Pre	Con	IrrNPre		Fut	Imp/Fut
B *ka*		*ka-nyja*	*ka-nyja*	*ka-nyjin*			*ka-ø*
G *ka*		*ka-jji*	*ka-jji*	*ka-jjin*			*ka-ø*
Nkr *ka*		*ka-ya*	*ka-nja*			*jika*	
pMan **ka*		**ka-ji?*	**ka-nyja~ *ka-nyji*	**ka-nyjin*			**ka-ø*

M	PP	PCon	Hab/PNeg		Pres		Imp
ka	*ka-nginy*	*ka-ni*	*ka-nyja-n/-p*		*ka-n*		*ka-w*
Ngan	PP	PCon	Pot	Pres	Fut	Evit	
ka	*ka-ng*	*ka-nti*	*ka-njan*	*ka-njini*	*ka-n*	*ka-yi*	
Nu[27]	P1	P2	Evit	NP2	NP1	NP3	
-ka~wa	*-ka-ng*	*-ka-nti*	*-ka-njan*	*-ka-njii*	*-ka-ng*	*-ki-ø*	
Marr	PPun	PCon	$Pres_3$	$Pres_{1-2}$	Fut	Pot	Imp
ka	*yaka-nyi*	*(yaka-rli* ND*)* ~ *ka-nji* D	*ka-nja*	*ka-njiyi*	*(ka-y)*	*ka-yi*	*(ya-ji)*
Gaag	PP	PI	Pres		Con		Fut
ka	*ka-ngka*	*ka-nyji*	*ka-nyji*		*(ka-ya)*		*ka-ø*
Kunp	RP	IrrP			RNP		IrrNP
ka	*ka-ngin*	*ka-nyji*			*ka-ny*		*ka-ng*
AEH	PP	PI			NP		
**ka*	**kang~ *kanginy*	**kaniny*			**ka-n*		
pArn	PP	PI	Hab/IrrP	NP1	NP2	Irr	Imp
**ka*	**ka-ng ~ *ka-nginy*	**ka-ni ~ ?*ka-nti?*	**ka-nyjan*	**ka-nyjini*	**ka-n*	**ka-yi*	

3.13.1 'take' in Proto Maningrida

Burarra and Gurr-goni have coalesced the Precontemporary and Contemporary tense forms, and we have no cognate in Ndjébbana. However, Na-kara shows two distinct forms for Precontemporary and Contemporary tenses, and I posited Pre **-ji* and Con **-nyji* in my original reconstruction on the basis of these forms. We have already seen a shift of *j* > *y* in Na-kara (see §3.1.1 **na-ja* > *na-ya* see-Con, etc.), and shifting vowels to *a* in verb suffixes has been a general development in Na-kara. However, we have also posited a shift of *a* > *i* in verb suffixes in Gurr-goni (see §3.1.1), so **ka-nyji* and **ka-nyja* are both possible reconstructions here.

Both Pre **-ji* and Con **-nyji* (or **nyja* > **-nyji*) would develop into *-jji* in Gurr-goni, following gemination of single stops after primary stress (see §3.1.1, 'see' and 'give'), and following the shift of homorganic nasal + stop sequences to geminate clusters seen in §3.4.1 and §3.10 'get' and 'scold' and other verbs discussed there. However, the extension of the Contemporary suffix **-nyji* (or **-nyja*) to cover both Realis categories (Precontemporary and Contemporary) must have occurred in Proto Burarra/Gurr-goni, as Pre **ji* would develop into *-jja* in Burarra following the same process of gemination. This would lead to distinct Pre and Con forms *-jja* and *-nyja* in Burarra, which has not occurred.

3.13.2 'take' in Proto Arnhem

AEH have posited **kaniny* for column 2 (Past Imperfective). This reconstruction appears somewhat problematical given the array of cognates shown in Table 29; Proto Maningrida

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27 This occurs as the final syllable of about 30 verb stems, including *lhakaaka* 'guide along, lead (someone)', *ijka* 'take (dogs) hunting', and *rtulwa* 'stalk emus with camouflage' (Heath 1982:419).

ka-ji, Marra *ka-nji*, Gaagudju *ka-nyji*, and Ngandi/Nunggubuyu *ka-nti*.[28] In themselves they are not easy to resolve, but do suggest that some form other than the frequent PI suffix *-Niny* may have existed.

The column 3 cognates Proto Maningrida **-nyji* (but **-nyja* also possible), Mangarrayi *-nyja*, Ngandi and Nunggubuyu *-nyjan*, Marra *-nyja* and Gaagudju *-nyji* clearly indicate either *-nyjan* or *-nyjin*. Given that Mangarrayi and Ngandi/Nunggubuyu do not otherwise show shifts of *i* > *a* in the verbal paradigm,[29] I propose *-nyjan*. (The final nasal is reconstructed by comparison with 'see' and 'give' (§3.1.1), where **na-jan* > *na-ja* in Proto Maningrida and Mangarrayi.)

The column 4 cognates Proto Maningrida **-nyjin* and Ngandi **-njini* suggest **-nyjini* (similarly to 'see' and 'give'; see §3.1.2), which may also be supported by Nunggubuyu *ka-njii* (see discussion in §3.1.2). Marra *ka-njiyi* is unexpected, as Marra *na-jini* 'see-Pres 1–2' and *wa-jini* 'give-Pres 1–2' appear to directly continue the posited **na-jini* and **wO-jini*.

3.14 'bite 1'

3.14.1 'bite 1' in Proto Maningrida

A root *pa* is found in all the Maningrida languages. The Contemporary tense form is clear: all four languages have *pa-nga*. (Ndjébbana has zero affixation (*pa-ø*) in the Contemporary tense, but *pá-nga-na* in the Irrealis Precontemporary, which is based on the Contemporary tense form; see §3.1.3). We therefore reconstruct **pa-nga*. The Precontemporary is not so easily defined. Na-kara has a form which does not appear to be cognate. However, as with *pungáya* (Table 13 above) and *purta* (Table 37 below), the disyllabic stem in Na-kara suggests that an original suffix has been reinterpreted as part of the stem. We may therefore have to consider Nkr *para* in the reconstruction of this column, giving the correspondence set of Burarra *pa-rra*, Gurr-goni *pa-rri*, Ndjébbana *pa-la* and Nkr *para*. This contrasts with the correspondence of B *rr*, G *rr*, Ndj *r* and Nkr *rt* found in Tables 6 and 26 above, and 34 below, which is reconstructed as **r*. Here, we have no clear reason to prefer a reconstruction of **-rra* (or **-rri*) over **-la* (or **-li*). We must simply posit **-Li/-La*, where L represents some liquid.

The B/G IrrNPre form has been reconstructed for Proto Maningrida in some paradigms, with support from cognates in other languages. Here there are no cognates among the wider group of languages, and little basis for discovering whether **pa-rti* existed in pMan, or is an innovation at the level of Proto Burarra/Gurr-goni. (With no other cognates, the form cannot be certain either. However, 'cut' (Table 25 above), and 'hit' (Table 37 below) suggest that **rt* was retained in Burarra and Gurr-goni.)

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28 Kunbarlang *ka-nyji* carry-IrrP appears to be a cognate of either the column 2 or column 3 forms. With 'bite 1', a Kunbarlang cognate is also found in the Irrealis Past for the column 2 form. Indeed, cognacy between *Past Imperfective and Kunbarlang Irrealis Past appears to exist for other verbs too, although it is less strikingly obvious.

29 Except, possibly, **yo-ri* > Ngan *yo-rta*, Nu *ya-ra*, M *yu-ra-n/-p* (Table 26), but there too a reconstruction with **a (*yo-ra)* is preferred, for the same reasons.

3.14.2 'bite 1' in Proto Arnhem

The wider cognates do shed light on the reconstruction of the Proto Maningrida column 2 form. In Ngandi *pa-ri,* Marra *paynga-rli*, Gaagudju *pi-ri* and Kunbarlang *payi-rli* ('eat-Irr2'; cf. footnote 28) *i* clearly predominates as the vowel, but there is an even division betwen *r* and *rl*, between a rhotic and a lateral as in the Maningrida languages, although here between different ones. The Mangarrayi root *rta ~ rtaya* does not appear to be cognate, but interestingly the suffixes do appear to be (and the root variation is comparable to that between *pa~paya* in other languages). If we include Mangarrayi *-rli* in the comparison, the weight of numbers would suggest this as a possible proto-form for pArn, retained in pMan. It is plausible also: we would then have **rl > r* in Ngandi (possibly at the Proto Ngandi/Nunggubuyu stage) and Gaagudju, and from pMan **pa-rli*, **rl > r* in Na-kara, with **rl > l* in Ndjébbana, and **rl > rr* (possibly through either **rl > r* or **rl > *l*) in Proto Burarra/Gurr-goni. As noted above in §3.14.1, this does appear to be a different correspondence set to that examined in §3.2.1 and §3.12.1, which was reconstructed as **r*. The differences are found only in Ndj and Nkr (and hence in pMan), and in Ngan, but cannot be disguised. Therefore, although **r* is a possible alternative reconstruction for 'bite 1' here (?**pa-ri*), both correspondence sets cannot be reconstructed as **r*; if ?**pa-ri* was adopted, then we would have an alternative reconstruction for 'spear', etc.

I will not attempt here to reconstruct a column 1 (pArn PP) form. **pa-ng* would certainly be a contender (M *rta-rlak* indicates a final **ng*, but in addition to the problem of the root, the *rl* appears to be an intrusion, perhaps based on the column 2 form).

In column 3, Proto Maningrida **pa-nga* matches Mangarrayi *rta-nga-* (with the problem of the root noted above). Ngandi *pa-ngini* and Nunggubuyu w_2*a-ngangun* both contain *-ngV* sequences, with *-NV(N)* additions. As with 'see', 'give', etc. part or all of this may be attributable to Proto Arnhem, but as they differ in the additional segments, all that can be proposed is **pa-ngaN(VN?)*.

For column 4, we again have no clear evidence for the Proto Arnhem stage. Proto Maningrida **pa-rti*, Ngandi/Nunggubuyu *pa-ngana* and Marra *pa-nji ~ paynganji* do not appear to be cognate. (A correspondence between Proto Maningrida **-rnti~*-rti* and Marra *-rntu* occurs with 'hit', see §3.18.2.)

Two other verbs with an identical inflectional pattern can be posited for pMan: **ngempo* 'wake up, lift up' (Table 31) and **jene* 'look for' (Table 32).

Table 30: **pa~pay* 'bite 1'

	1	2	3	4	5	6	7
		Pre	Con	IrrNPre		Fut	Imp/Fut
B *pa~pay*		*pa-rra*	*pa-nga*	*pa-rta*			*pa-y*
G *pa~pay*		*pa-rri*	*pa-nga*	*pa-rti*			*pa-y*
Ndj *pa*		*pá-la*	*pa-ø* (*pá-nga-na* IrrP)				*(moya)*
Nkr *para*		*para-ngiya*	*para-nga*				*para-ø*
pMan **pa*		**pa-Li/-La*	**pa-nga*	**pa-rti?*			**pa-y*
M	PP	PCon	Hab/PNeg		Pres		Imp
rta~rtay	*rta-rlak*	*rta-rli*	*rtay-nga-ma-n* *rtay-nga-m*		*rtaya-ø*		*rtaya-ø*

Ngan	PP	PCon	Pot	Pres	Fut	Evit	
pa~pi	*pa-ng*	*pa-ri*	*pa-ngini*	*pa-ngana*	*pi-yang*	*pa-ngi*	
Nu	P1	P2	Evit	NP2	NP1	NP3	
w_2a[30]	*-w_2a-ng*	*-w_2a-ngaa*	*-$w_2$angangun*	*-w_2a-ngana*	*-w_2a-ng*	*-w_2i-ø*	
Marr	PPun	PCon	$Pres_3$	$Pres_{1,2}$	Fut	Pot	Imp
pa D ~wa ND ~ yinga ~ paynga	*(yinga)*	*wayngarli*	*(pa-ma ~ paynga-ma)*	*pa-nji ~ paynga-nji*	*paynga~pa yngay*	*yinga-y ~ paynga-yi*	*wa-ji*
Gaag	PP	PI	Pres			Con	Fut
pi	*pi*	*pi-ri*	*(pi)*			*piya*	*pi*
Kung	RPerf	PI	NP	IrrNFut			Imp
	___	*(peya-ng)*	*pey-ang*	*pey-ene*			*peya*
Kunp	RP	IrrP				RNP	IrrNP
	pey-ang	*peye-rli*				*peye*	*peye ~ peyang*
pArn	PP	PI	Hab/IrrP	NP1	NP2	Irr	Imp
**pa*		**pa-rli~ payi-rli*	**pa-ngaN(VN?)*				**pa-y*

Table 31: **ngempo* 'wake up, lift up'

	2	3	5	7
	Pre	Con	NP	Fut/Imp
G *ngeppi*	*ngeppi-rri*	*ngeppi-ka*	*ngeppi-rti*	*ngeppi- ø*
Ndj *nyempo*	*nyapé-la*	*nyapo- ø*		*nyémpa- ø*
pMan **ngempe/o*	**ngempe-Li*	**ngempo-nga*	**ngempe-rti?*	**ngempi*

Table 32: **jene* 'look for'

	2	3	5	7
B *jene*	*jena-rra*	*jena-nga*	*jena-rta*	*jena-ø*
G *jeni*	*jeni-rri*	*jeni-nga*	*jeni-rti*	*jeni-ø*
Ndj *jena*	*yané-la*	*yana-ø*		*jjéna-ø*
pMan **jene*	**jene-Li*	**jene-nga*	**jenV-rti?*	**jeni-ø*

3.15 'burn, cook 1'

This root is not found in the Maningrida languages (see Table 33, below). There are numerous cognates in the wider group of languages. Reconstruction of **na-rli* in column 2 follows the same arguments as for column 2 of 'bite 1' (§3.14 above). In column 3, M *rnay-nga-m*, Ngan *rna-ngini*, Nu *na-ngangun*, the Warn stem *nangi*, and the Gaag transitive form *ni-ngi* all suggest **na-ngiN*. The Gaag intransitive form *na-y* and Marr *na-ja* suggest **na-ja(N)*. This may have been an alternation present in the proto-language, or it may be influence from the paradigm of **na* 'see' (transitive), in which there are widespread reflexes

30 w_2 symbolises the alternation of *w* and *p*.

of **na-jan*. (Marra *nu-rlu*, also in column 2, appears to be an intrusion from the paradigm of **ni* 'sit' (Table 28), while the rest of the paradigm is almost identical to that of 'see').

Lacking a Proto Maningrida cognate, and with the Marra paradigm apparently influenced by that for 'see', the only reliable evidence for column 4 is from Ngandi and Nunggubuyu, so that reconstruction of **na-ngana* here must remain tentative.

3.16 'throw'

3.16.1 'throw' *in Proto Maningrida*

A similar, but not identical, paradigm, is found for the pMan root **wa~wo* 'throw'. Burarra has no reflex of this root, but cognates are found in Gurr-goni, Ndjébbana and Na-kara. Both Ndj and Nkr have disyllabic stems, of which the last syllable, *wo/wa*, appears to continue the original stem, while a syllable *ra/rta* (possibly the root **ra* 'spear', see §3.2.1) has been added. Reconstruction of **wa-nga* (?**wo-nga*) for column 2 is clear; G suggests also column 5 **wa-rti*. The Imperative (column 7) is irregular in G, as it is for **pa* 'eat' (Table 30 above), and is again posited for the proto-language. In column 2, we find the same correspondence set of G *rr*, Ndj *r* and Nkr *rt*, as we saw in Tables 6 and 26 above, where it was reconstructed as **r*. The form here, then, appears to be **wa-ri*.

Table 33: **na* 'burn, cook 1'

	1	2	3	4	5	6	7
M	PPunct *rna-rlak*	PCon *rna-rli*	Hab/PNeg *rnay-nga-ma-n/* *rnay-nga-m*		Pres *rnaya-ø*		Imp *rnaya-ø*
Ngan	PPunct *rna-ng*	PCon *rna-ri*	Pot *rna-ngini*	Pres *rna-ngana*	Fut/Imp *rni-yang*	Evit *rna-ngi*	
Nu	P1 *na-ng*	P2 *na-ngaa*	Evit *na-ngangun*	NP2 *na-ngana*	NP1 *na-ng*	NP3 *ni-ø*	
Marr	PPunct *ni-ji*	PCon *(na-ni)*	$Pres_3$ *na-ja ~* *(nu-rlu)*	$Pres_{1-2}$ *na-jini*	Fut *na-y*	Pot *ni-yi* ND, *nayinayi* D	Imp *ni-ø*
Warn	PPunct *nangi-ø*	PIrr *nangi-ri*	PaActCon *nangi-ma*				Imp *ni-ø*
Gaag intr. tr.	PP *nana~na* *ni-ki*	PI *na-ri* *ni-ngi*	Pres *na-y* *ni-ngi*			Con *na-ya* *ni-ya*	Imp *ngana-ø* *ni-ya*
Kung	RPerf *neyang*	Irr	NP	IrrNFut			
R Ngal	PPunct *rne-ny* *rne-ny*	PCon *rniya-nginy* *rne-nginy*			*rniya-ø*	*rniya-ngV*	
pArn **na*	PP **na(ya)-ng* *~ *na-ny?*	PI **na-rli*	Hab/IrrP **na-nga ~* *na-ja(N)?*	NP1 **na-ngana?*	NP2 **na-ya?*	Irr	Imp

Table 34: **wa* 'throw'

	1	2	3	4	5	6	7
		Pre	Con		IrrNPre	Fut	Imp/Fut
G *wa*		*wa-rri*	*wa-nga*		*wa-rti*		*wa-y*
Ndj *rawo*		*rawé-ra*	*rawo-ø* (*rawó-nga-na* IrrPre)				*ro-ø*
Nkr *rtawa*		*rtawa-rta*	*rtawa-nga*				*rtawa-ø*
pMan **wa*		**wa-ri*	**wa-nga ~ ?wo-nga*		**wa-rti?*		*wa-y*
M *war*	PPunct *war-ak*	PCon *war-i*	Hab *war-nga-ma-n* PNeg *war-nga-m*		Pres *war-ø*		Imp *war-ø*
Nu *-wa*[31]	P1 *-wa-ny*	P2 *-waa*	Evit *-wa-ngun*	NP2 *-wa-na*	NP1 *-wa-ng*	NP3 *-wi-ø*	
Gaag *-wa*[32]	PP *-wa-ø*	PI *-wa-ri*	Con *(-wi-ø)*			Fut *-wa-ø*	Pres *-wa-y*
BGW *we~wa*	PP *we-ng*	PCon *we-yi*			NP *wa-ø, we-n?*		Imp *we-men*
pArn **wa*	PP **wa-ng*	PI **wa-ri*	Hab/IrrP **wa-nga*	NP1	NP2	Irr	Imp **wa-y?*

Table 35: **kinyi* 'cook 2'

	1	2	3	5	6	7
		Pre	Con		Fut	Imp/Fut
G *jinyi*		*jinyi-rri*	*jinyi-nga*	*jinyi-rti*		*jinyi-ø*
Nkr *kenya* 'light small fire'		*kenya-rta*	*kenya-nga*			*kenya-ø*
pMan		**kinyi-ri*	**kinyi-nga*	**kinyi-rti?*		*kinyi-ø*
	RP	IrrP			RNP	IrrNP
Kunp	*kiny-ang*	*kinye-rli*			*kinye*	*kiny-ang*
BGW	*kiny-eng*				*kinye*	
D	*kiny-ing*				*kiny*	
pArn	PP **kinye-ng*	PI **kinyi-ri*	Hab/IrrP	Irr	Imp	PP

For Proto Maningrida, the paradigm of **kinyi* 'cook 2' (shown in Table 35) appears to be identical to that of **wa* 'throw', except that it does not have an irregular imperative. Cognates are also found in the wider group of languages (in Bininj Kun-wok, Dalabon, and in Kunbarlang, which has a cognate column 2 form).

31 This occurs as the final syllable of *yarrawa* 'throw'.

32 This occurs as the final syllable of *ngawa* 'hear' and other verbs.

3.16.2 'throw' *in Proto Arnhem*

The limited additional evidence for pArn suggests that the pMan forms have undergone little change. M column 2 *wa-ri* supports the posited pMan **wa-ri*; in M, *r* appears to have spread from this TAM category to all others, and has been incorporated as part of the stem.

3.17 *-mV-* verbs

3.17.1 -mV- *verbs in Proto Maningrida*

A number of di- or polysyllabic verb stems with *-mV* as the final syllable share a similar conjugation to *pa* 'eat, bite 1' and *wa* 'throw', at least in Burarra, Gurr-goni and Na-kara. Some are reconstructable for Proto Maningrida: **ngimi* 'paint, spread, rub', **rimi* 'have, hold', **numi* 'smell', **kOtmi*[33] 'put down'. The picture is complicated, however, by the existence of more than one paradigm for *-mV* verbs in Gurr-goni and Ndjébbana. Gurr-goni has three sets of *-mV-* verbs, and a monosyllabic root *meme ~ma* 'go along', all with slightly different patterns of inflection. Ndjébbana has two. These are all shown in Table 36a, for ease of comparison. (The table shows only the *mV* syllable plus suffix. If *mV* is the final syllable of a longer verb stem, it is shown as *-mV*; if it is an independent root, it is shown without a preceding hyphen.)

Table 36a: **mV* verbs in Maningrida languages and pMan

	2	3	4	5	7
B *ngima* 'paint', *numa* 'smell', *kengama* 'dislike', *kurrma* 'put down', *rrima* 'have, hold'	*-ma-rra*	*(-ma-nga)*	*-ma-n*	*-ma-rta*	*-ma-ø*
G *nyimi* 'paint', *numi* 'smell', *rrimi* 'have, hold'	*-mi-rri*	*(-ma-nga)*		*-mi-rti*	*-mi-ø*
G *kekimi* 'dislike'	*-mi-rri*	*-ma-ø*		*-mi-rti*	*-mi-ø*
G *korrmi/a* 'put'	*-ma-rnay*	*-ma-ø*		*-mi-rti*	*-mi-ø*
G *ma~me* 'go along'	*ma-rnay*	*ma-ma*		*ma-rti*	*me-me*
Ndj *nyami* 'paint'[34], *yema* 'dislike'	*(-mi-nga)*	*-ma-ø*			*-ma-ø*
Ndj *rímí* 'have, hold'	*-mé-ra*	*ma-ø*			*ma-ø*
Nkr *keyama* 'dislike'	*-ma-rta*	*-ma-ø*			*-ma-ø*
pMan **ma* 'go along', **ngimi* 'paint', **rimi* 'hold', **kOtmi* 'put down 2', **numi* 'smell'	**ma-ri ~ mi-ri*	**ma-ø ~ ma-ma*		**ma-rti?*	**mi-ø*

33 In Burarra and Gurr-goni, **t > rr*, as in **wet(a)* 'pass by', Ndj *wetta*, G *werr*, and **rita* 'tooth/teeth', Ndj *ritta*, B *rrirra*, G *rrirri*, and here **kOtmi* 'put down' > B *kurrma*, G *korrmi*.

34 The Ndjébbana verb 'to paint, rub, spread' is *porapa*. The IrrPre form is suppletive, *nyamíngana*, clearly a reflex of **ngimi*.

Table 36b: **mV* verbs in other languages and pArn

	1	2	3	4	5	6	7
M	PPunct	PCon	Hab/PNeg		Pres		Imp
ma 'do, say'	*ma-ny*	*ma-ri*	*ma-ma-n* *ma-ø-m*		*ma-ø*		*ma-ø*
-mi 'bound aux'	*-mi-ny*	*-mi-ri*	*-mi-mi-n* *-mi-ø-m*		*-mi-ø*		*-mi-ø*
rnu-ma 'smell', *rna-ma* 'hold'	*-m-tak*	*-m-ti*	*-ma-ma-n* *-ma-ø-m*		*-ma-ø*		*-ma-ø*
Ngan	PPunct	PCon	Pot	Pres	Fut	Evit	
rni-ma 'hold'	*-mu-ng*	*-mi-ri*	*-mi-ni*	*-ma-na*	*-ma-rang*	*-mi*	
yi-ma 'do, say'[35]	*-mi-ny*	*-mi-ri*	*-mi-ni*	*-ma-na*	*-ma-rang*	*-mi*	
Nu			Evit	NP2	NP1	NP3	
ni-ma 'have, hold'	*-ma-ny*	*-maa*	*-ma-ngun*	*-ma-na*	*-ma-ng*	*-mi*	
Marr	PPunct	PCon	$Pres_3$	$Pres_{1-2}$	Fut	Pot	Imp
mpurl-ma 'do'	*-ma-ø*	*-ma-rli*	*-ma-ma*	*-ma-nji*	*(-ma-y)*	*-mi-yi/* *-ma-yi*	*-mi-ø*
Warn	PPunct	PIrr	PaActCon				Imp
mi~ma 'do, say'	*mi-ø*	*mi-ri*	*ma-ma-ø*				*mi-nti*
Gaag	PP	PI			Pres	Con	Fut
ka-ma 'do'	*-ma-ø*	*-ma-ri*			*(-ma-y)*	*-ma-ya*	*-ma-ø*
R	PPunct	PCon	Pres		Pres		
	-mi-ny	*mv-rn*					
Kung	RPerf	PI	NP	IrrNFut	IrrFut		Imp
ngap-mV 'dive'	*-mi-ny*	*-ma-rrang*	*-me-m*	*-me-re*	*(-ma-ø)*		*-mi-ø*
	RP	IrrP			RNP		IrrNP
Kunp *-ma* 'aux', *nge-me* 'spread, rub'	*-me-ng*	*-me-rli*			*(-ma-ø)*		*-ma-ø* *~ -me-ø*
Warr	*-mi-ny*	*-ma-rlany*					
Ngal	*-mi-ny*	*-mi-yiny ~* *-me-riny*					
AEH	PP	PI			NP		
	**-many*	**-marany ~* *mariny*			**-mar*		
pArn	PP	PI	Hab/IrrP	NP1	NP2	Irr	Imp
	**ma-ny*	**ma-RV*	**ma-ø ~* **ma-ma*		**ma-R2(V)*		**mi?*

35 The Ngandi verb *yima* is fully inflected for all TAM categories, as shown here, but does not occur independently. Following the inflections shown here, the thematising suffix *-h-thu-* is added, itself inflected for all TAM categories.

In column 2, B *-ma-rra*, G *-mi-rri*, Ndj *-mé-ra* and Nkr *-ma-rta* suggest a proto-form *-mi-rV* (with the correspondence set B/G *rr*, Ndj *r*, Nkr *rt* as in Tables 6, 26 and 34). Ndj *-mi-nga* (in *nyamí-nga-na*, the suppletive IrrPre form of the verb *porapa* 'paint, spread, rub') is clearly not cognate. AEH point out that the paradigms of *ma* 'get' and *-ma* 'thematising suffix' appear to have influenced each other in a number of languages, and it is the case that *ma-nga* is also the Precontemporary (column 2) form of 'get' in Ndj. This may then be its origin. The G column 2 form (-)*ma-rnay*, found with the independent root 'go along' and in verbs such as *korrma-rnay* 'put-Pre', is highly irregular, not only in the Maningrida languages, but it has no apparent cognates among the wider group of languages. I attribute this form to innovation in Gurr-goni.

G, Ndj and Nkr all show zero affixation, *-ma-ø*, in column 3. G and B also have a suffix *-nga* in this column (B *ngima-nga*, G *nyimi-nga*, for example). As noted above, AEH suggest that *ng* forms in the paradigm of *ma* 'thematising suffix' may be intrusions from the verb 'get'. In this case, the forms are not identical: compare B *ma-ngka* and G *me-kka* 'get-Con'. However, the existence of *-nga* as the column 3 suffix for 'eat, bite 1' (Table 30), 'look for' (Table 32), and 'throw' (Table 34), in all of which the Burarra and Gurr-goni column 2 suffixes *-rra/-rri* are identical to the column 2 suffixes here, suggest a source of analogical influence. Although the column 2 suffixes for these verbs in pMan have not been reconstructed identically, following the posited sound changes by which **L* and **r* both became *rr* in Burarra and Gurr-goni, there would be strong pressure to adapt this paradigm to conform, especially as the change replaces a zero suffix with an overt one.

Note that this does not account for G *kekimi-rri* (column 2), *kekima-ø* (column 3). This verb is something of a mystery: B *kenga-ma*, G *keki-mi*, Ndj *yé-ma* and Nkr *keya-ma* show similarities in the initial element, but the consonant correspondences appear anomalous in comparison to other known cognate sets.

3.17.2 -mV *verbs in Proto Arnhem*

An independent root *ma* 'do, say' is found in Mangarrayi and Warndarrang; Marra and Gaagudju have disyllabic verbs meaning 'do, say' in which the second syllable is *ma*. Mangarrayi, Ngandi and Nunggubuyu all have a verb *nima* meaning 'have, hold'; the initial syllable is not cognate with Proto Maningrida **rimi*, but the final syllable plus inflections certainly is. Mangarrayi does have a cognate of pMan **numi* 'smell', and Kunbarlang has a cognate of pMan **ngimi* 'spread'. (Another verb, not shown in the table, which appears to be cognate between Kunbarlang and Gurr-goni is Kunp *rleme*, G *rremi*, both 'pound, bash', which would suggest a proto-form **remi* or **rlemi*. However, while the sound correspondences suggest some time depth in Gurr-goni at least, these two languages are adjacent, and borrowing must be considered unless cognates appear in more distant languages.)

In column 2, there are numerous cognates suggesting pArn **ma-RV* or **mi-RV*. It is not certain here how the rhotic is to be reconstructed, as there are some differences from correspondence sets examined previously. In Burarra, Gurr-goni, Na-kara, Mangarrayi, Marra and Gaagudju, the same reflexes are found as in Tables 6, 26, 35 (reconstructed as **r*). Rembarrnga has *rn*, compared to *r* in Table 26 (although AEH offer a plausible derivation of *-marn* from **-marany*). Nunggubuyu also had *r* in Tables 6 and 26 (**ra > ra* root-initially in Table 6, **yu/o-ri > ya-ra* (Table 26), and **thu-ra > lha-ra* (Table 27), where

it was suffix-initial, and thus in intervocalic position as here). Here, **ma-RV* appears to have developed to *maa. Yarrawaa* 'throw, column 2' (Table 35) (**wa-ri > -waa*) is another probable instance of such a development. In other Nunggubuyu verbs *aa* appears to have developed from **arlii*: **pa-rli > *pa-nga-rli > wangaa* 'bite 1, column 2' (Table 30), and **na-rli > na-nga-rli > nangaa* 'burn 1, column 2' (Table 34). In Ngandi, **r* appeared to develop to *rt* in **yu/o-ra > yu-rta* 'lie', **thu-ra > thu-rta* 'stand' and **nu-ra > rnu-rta* 'sit (Tables 26, 27 and 28), although alternative cognates with *r* also exist for 'stand' (*thorow*) and 'sit' (*rnorow*), and the Ngandi stem *ramtha* 'spear' may be a reflex of **ra-m* (spear-column 1), Table 6. (Kungarakayn has *r* here, where *l* appeared in Table 6. It is possible that the development of **r* in Kungarakayn was conditioned by the environment in which it occurred: in **ra-m > la-m* 'spear-column 1' it is root-initial, while here it is suffix-initial and therefore intervocalic. Kungarakayn has few (no?) other cognates with reflexes of putative **r* with which to test this hypothesis.) In short, the majority of reflexes point to **r*, but Ngandi and Nunggubuyu present some difficulties.

In column 3, **ma-ø* was reconstructed for pMan on the basis of Ndjébbana and Na-kara as well as Gurr-goni. Among the other languages, it is found only in Mangarrayi. The wider pattern (appearing in Mangarrayi, Marra, Warndarrang, and perhaps Kungarakayn (*-mem*) is reduplication of the *mV* root. Significantly, both *ma-ø* and *ma-ma* occur in Gurr-goni and in Mangarrayi, and this alternation in two distant languages gives us reason to attribute it to Proto Arnhem (and to Proto Maningrida).

In column 5, the tentative reconstruction of pMan **ma-rti*, when compared with Ngandi *-ma-rang* (and Warray *-ma-rl*, Jawoyn *-ma-r*), suggest that this form also contained a liquid in Proto Arnhem. Again, the reconstruction is somewhat difficult. While it is not absolutely certain what pMan phoneme Burarra and Gurr-goni *rt* reflect, it is certain that *rt* is not a regular reflex of **r* (at pMan or pArn level), therefore it is unlikely that this form contained **r*. **rl* is possible, but if that were so, then the correspondence set which has been reconstructed as **rl* in 'bite 1' (Table 30), 'burn, cook 1' (Table 34), and, probably, in 'stand' and 'sit' (Tables 27 and 28) must have a different reconstruction. The two forms in which **rt* has been reconstructed, **pu-rnti* 'hit-column 3, and (more tentatively) **ko/urnta* 'cut', are both lacking cognates in Ngandi, so we have no evidence of the reflex of **rt* in Ngandi. I will therefore leave this form as **ma-R2(V)*.

3.18 'hit'

3.18.1 'hit' in Proto Maningrida

Table 37: **pu* 'hit'

	1	2	3	4	5	6	7
		Pre	Con		IrrNPre	Fut	Imp/Fut
B *pu*		*pu-na*	*pu-rnta*		*pu-n*		*pu-ø*
G *pu*		*pu-ni*	*pu-rnti*		*pu-n*		*pu-ø*
Ndj *ppo~ppu*		*ppó-na*	*-ppú-ra*				(suppl)
Nkr *purta*		*purta-ø*	*purta-nga*				*purta-ø*
pMan **pu*		**pu-ni*	**pu-rnta ~ pu-rta, or *pu-rnti ~ pu-rti*		**pu-n*		**pu-ø*

M	PP	PCon	Hab/PNeg		Pres		Imp
pu	*pu-p*	*pu-ni*	*pu-rnta-n/-p*		*pu-n*		*pu-ø*
Ngan	PPunct	PCon	Pot	Pres	Fut	Evit	
po~pu	*poo-m*	*pu-ni*	*(po-mini)*	*(pu-mana)*	*pu-nung*	*pu-yi*	
Nu	P1	P2	Evit	NP2	NP1	NP3	
w_2a~w_2i~w_2u	*w_2a-ng*	*w_2i-ni*	*(w_2u-mangun)*	*(w_2u-mana)*	*w_2i-ny*	*$w_2$uu*	
Marr[36]	PPunct	PCon	$Pres_3$	$Pres_{1-2}$	Fut	Pot	Imp
-wu	___	*-wu-ni*	*-wu-rntu*	*-wu-rntiyi*	*-wu-y*	*-wu-yi*	*-wu-ø*
Warn	PPun	PaPot	PaActCon				Imp
pa~pi~pu	*pa-ø*	*pi-ni*	*pu-ra*				*pi-ngu*
Gaag	PP	PI	Pres			Con	Fut
pu	*pu-mu*	*pu-ni*	*pu-nyji*			*pu-ya*	*pu*
Kung	RPerf	PI	NP	IrrNFut		IrrFut	Imp
pu	*pu-m*	*pu-ne?*	*(pu-mu)*	*pu-yune, pu-ne, pi-ni?*		*yi*	*pu-mu?*
Kunp	RP	IrrP			RNP		IrrNP
	pu-m	*pu-ni*			*pu-ny*		*pu-ø*
AEH	PP	PI			NP		
**po~pu*	**pom~ pong*	**puniny*			**pun*		
pArn	PP	PI	Hab/IrrP	NP1	NP2	Irr	Imp
	**po-m ~ po-ng*	**pu-ni*	**pu-rnta*		**pu-n*		**pu-ø*

Precontemporary **pu-ni* is unproblematical. In Contemporary tense, Burarra *-rnta*, Gurr-goni *-rnti*, Ndjébbana *-ra* and Na-kara *-rta* suggest reconstruction of **-rnti* (possibly ~**-rnta*), with loss of the nasal in Na-kara and Ndjébbana. (In Na-kara, the original Contemporary tense suffix appears to have been reanalysed as part of the stem, with other TAM suffixes (*-ø, -nga*) added.) An alternative reconstruction would be **-rta* (or **-rti*), with an epenthetic nasal in Burarra/Gurr-goni. This seems less well motivated; but it does seem possible that variation between, for example, **pu-rnti ~ *pu-rti* might have existed in the proto-language. As was the case with 'see' and 'give', Burarra and Gurr-goni have an inflectional paradigm, similar to that for *pu* 'hit', for di- and polysyllabic verbs (in this case, the characteristic final syllables are *ppu, pu, ppi, pi, ppa, pa*, etc.[37]). Here, the Contemporary tense suffix is *-rta* in Burarra, *-rti* in Gurr-goni. Cognate verb stems can be found in Na-kara and Ndjébbana, suggesting that they may be reconstructable for Proto Maningrida. (A

36 In Marra, *wu* does not occur as an independent verb, but only as the final syllable of several polysyllabic, transitive verb stems (*kulukuluwu* 'wait for (dugong/turtle) to surface', *jarrawu* 'take (dog) hunting'). The suffixes are clearly cognate with those for the verb 'hit' in Proto Maningrida and Mangarrayi. It appears that **pu* 'hit' has not survived as an independent verb in Marra, but only in stems where it was probably originally an auxiliary following a coverb (as is suggested above for verbs like Proto Maningrida **worlppu* 'hunt').

37 These verb stems probably derive historically from coverb + inflected monosyllabic auxiliary verb constructions. Such constructions are common in other non-Pama-Nyungan languages such as Mangarrayi and Marra, but rare synchronically in Burarra and Gurr-goni.

similar reduction of a suffix-initial consonant cluster following a cluster in the stem was noted for **ngunyja* 'mimic'; see §3.9 above.) Examples are shown in Tables 38–41.

Table 38: **worlppu* 'hunt'

	2	3	4	5	7
B	*worlppa-na*	*worlppa-rta*	*worlppa-nga*	*worlppa-n*	*worlppa-ø*
G	*worlppi-ni*	*worlppi-rti*	*worlppi-ka*	*worlppu-n*	*worlppu-ø*
Nkr	*worlppa-na*				
pMan	**worlppu-ni*	**worlppu-rti*	**worlppu-nga*	**worlppu-n*	**worlppu-ø*

Table 39: **ngarnpu* 'be warm'

	2	3	4	5	7
B	*ngarnpa-na*	*ngarnpa-rta*	*ngarnpa-nga*	*ngarnpa-n*	*ngarnpa-ø*
G	*ngartpi-ni*	*ngartpi-rti*	*ngartpi-ka*	*ngartpu-n*	*ngartpu-ø*
Nkr	*marangarnpa-na*				*marangarnpa-ø*
pMan	**ngarnpu-ni*	**ngarnpu-rti*	**ngarnpu-nga*	**ngarnpu-n*	**ngarnpu-ø*

Table 40: **juppu* 'extinguish'[38]

	2	3	4	5	7
B	*juppa-na*	*juppa-rta*	*juppa-nga*	*juppa-n*	*juppa-ø*
G	*juppi-ni*	*juppi-rti*	*juppi-ka*	*juppu-n*	*juppi-ø*
Ndj	*jjúppa-nga*	*jjúppa-ø*			*jjúppa-ø*
pMan	**juppu-ni*	**juppu-rti*	**juppu-nga*	**juppu-n*	**juppi*

Table 41: **wirrppu* 'spray'

	2	3	4	5	7
B	*wirrppa-na*	*wirrppa-rta*	*wirrppa-nga*	*wirrppa-n*	*wirrppa-ø*
G	*wirrppi-ni*	*wirrppi-rti*		*wirrppu-n*	*wirrppu-ø*
Nkr	*wirrppa-na*				*wirrppa-ø*
Ndj	*wírrpa-na*	*wírrapa-ra*			*wírrapa- ø*
pMan	**wirrppV-ni*	**wirrppu-rti*	**wirrppu-nga*	**wirrppu-n*	**wirrppu-ø*

If Proto Maningrida had only **pu-rnti*, then Ndjébbana has regularised its paradigm through dropping the nasal, **rnt* > **rt*, and then shifting **rt* > *r* for both monosyllabic *pu* and di- and polysyllabic stems. Alternatively, Proto Maningrida may already have had alternants **pu-rnti* ~ **pu-rti*, and Ndjébbana has simply eliminated one.

Na-kara has obscured the probable original relationship between the monosyllabic verb *pu* 'hit' and the di- and polysyllabic stems ending in *-pa/-ppa*. **pu-rta* 'hit-Contemporary tense'

[38] Na-kara *jupakarama* 'extinguish' probably retains a reflex of this verb in a compound with another verb. BGW *dompun* 'extinguish' is a possible further cognate here. BGW *mp* : G *pp* would be a regular correspondence, but BGW *mp* : B and Ndj *pp* would not appear to be, on our present understanding. If the correspondence could be sustained, the initial *t:j* would suggest pArn **thOmpu*.

has been reanalysed as the stem, and its inflectional paradigm changed, while for the *-pa/-ppa* verbs, the original Precontemporary suffix *-na* (< **-ni*) now covers both Precontemporary and Contemporary tenses.

3.18.2 'bit' in Proto Arnhem

The suggested Proto Maningrida column 3 **-rnti/-rnta* has clear cognates in Mangarrayi *pu-rnta-* and Marra *pu-rntu*. **-rnti* was posited for Proto Maningrida on the evidence of Gurr-goni alone. However, Mangarrayi does not appear to have changed *i* > *a* elsewhere in the verb paradigm, whereas we have already seen an instance where the weight of evidence suggests that in Gurr-goni the opposite shift *a* > *i* has occurred (Proto Arnhem **-jan* > Proto Maningrida **-ja* > Gurr-goni *-ji*, Contemporary tense suffix for 'see' and 'give', see §3.1.1) This suggests a stronger case for positing **-rnta* for Proto Maningrida, and possibly for Proto Arnhem. How Marra *pu-rntu* fits in is not clear, but again, other shifts of *a* > *u* appear to have taken place in Marra (**nu-ra* > *wu-rlu* 'sit' and **thu-ra* > *ju-rlu* 'stand', both column 3, see §3.1 2.2; **wO-jan* > *wa-jungu* 'give' column 3, see §3.1.2). I thus posit **pu-rnta*. Warndarrang *pu-ra* may plausibly derive from this.

Ngandi and Nunggubuyu are aberrant here, having *po-mini* and *wu-mangun* respectively. The forms are identical to those for *-mV* verbs, and it appears that *-mV* has been added as a thematising suffix, and the resulting stem then takes the inflections appropriate to that suffix. Possibly the appearance of *-m* in the Past Punctual acted as a stimulus. Interestingly, Kungarakayn has *pu-mu* in the Nonpast (the category where cognates of column 3 forms are found for other verbs). Perhaps Kungarakayn has independently extended the *-m* found in the Past Perfective to this category; or, perhaps, these two widely separated forms are reflexes from Proto Arnhem — of an alternative to **-rnta*, or another category — the evidence is insufficient to be certain.

Gaagudju is tantalising here. The PP *pu-mu* appears to be a very plausible reflex of **po-m*, and the PI *pu-ni* could easily derive from **pu-niny* (but is hardly an unusual form). The Present form *pa-nyji* contains a homorganic nasal stop cluster, as does **pu-rnta* (and, interestingly, a number of other column 3 allomorphs). Could *pa-nyji* derive from a proto-form **pu-rnti* by assimilation of the place of articulation? (A similar development of **rnt* > *nyj*, with a possible factor of analogical pressure, has already been noted in Ndjébbana for 'cut', Table 25 above.)

It does not appear possible to reconstruct a proto-form for column 4. Ngandi/Nunggubuyu *po-mana/pu-mana*, Marra *wu-rntiyi* and Kungarakayn *pu-yune* are too divergent.

3.19 'eat', 'bite 2'

3.19.1 'eat', 'bite 2' in Proto Maningrida

This root is found only in Ndjébbana and Na-kara, and only Na-kara has distinct Precontemporary and Contemporary tense forms. In Ndjébbana the Precontemporary form has been replaced by the Contemporary form. We then posit Pre **ji-rra* and, probably, Con **ji-nyja*. Na-kara retains the posited **ka-nyja* 'take-Con'; this reconstruction was based on evidence from Burarra and Gurr-goni also. Unfortunately, Ndjébbana does not have a cognate form of the verb 'take', so we cannot compare the Contemporary tense allomorphs

for that verb with this one. Na-kara does have evidence, however, of some instances of apparent loss of the stop from a putative homorganic nasal + stop sequence in the proto-form (see 'get', 'speak', 'fall', §3.4.1), suggesting that **nyj* > *ny* is a possible development here.

Table 42: **ja ~ ji* 'eat, bite 2'

	1	2	3	4	5	6	7
		Pre	Con				Fut
Ndj		*-jji-nyja*	*-jji-nyja*				*ya-ø*
		Pre	Con			Fut	Imp
Nkr		*ja-rra*	*ji-nya*			*ji-ya*	
pMan		**ja-rra*	**ji-nyja*			**ji-ya*	**ya-ø*
M	PP	PCon	Hab/PNeg		Pres		Imp
	ji-rrak	*ji-rray*	*ji-nyja-n/-p*		*ja-ø*		*ja-ø*
Marr	PPun	PCon	$Pres_3$	$Pres_{1-2}$	Fut	Pot	Imp
yi~ ya ND, *ji ~ja* D	____	*ya-rli*	*yi-nja*	*yi-njini*	*yi-ø*	*yi-yi*	*yi-ø*
Gaag	PP	PI	Pres		Con		Fut
	(pa)	*ja-ri*	*y*		*ja-ki*		*ja*
Kung		PI	NP				Imp
		ja-rang, jo-rong	*ju-r*				*ja-m*
Kunp	RP	IrrP				RNP	IrrNP
	ja-rrang	*ja-rri*				*(ji-n)*	*(ja-ng ~ji-n)*
pArn	PP	PI	Hab/IrrP	NP1	NP2	Irr	Imp
		**ja-rring*	**ji-nyja*	*?*ji-nyjini*		**ji-yi*	

3.19.2 'eat', 'bite 2' in Proto Arnhem

Few cognates are found in the wider group of languages which show evidence of the column 3 and 4 forms. The column 3 forms *ji-nyja-* (M) and *yi-nja ~ ji-nja* (Marra) lend support to the proposed reconstruction of Proto Maningrida **ji-nyja*, and indicates that it can be posited for Proto Arnhem also. The Marra column 4 form can only tentatively be suggested for Proto Arnhem NonPast 1, as there is no other evidence at all. (As can be seen, a cognate root exists in Kungarakayn, but few forms were recorded.)

In column 2, the correspondence of Na-kara (and Proto Maningrida?) *rr*, Mangarrayi *rr*, Marra *rl*, Gaag *r* and Kung *r* may possibly derive from **rr*, contrasting with the correspondence sets found in 'lie', 'stand' and 'sit' (proposed here as **r*), and in 'bite 1' (proposed here as **rl*). The vowels of both root and suffix vary across the languages between *a, i* and *o*, making firm reconstruction difficult. However, the existence of Marra *ja-rli* and Gaag *jari* suggests that *i* is a strong contender for the suffix. I would tentatively propose **ja-rring* on the basis of these languages.

4 Summary of Proto Maningrida reconstructions

See Table 43, below.

5 Summary of Proto Arnhem reconstructions

See Table 44, below.

6 Conclusion

The extensive shared irregularities that emerge from a close examination of the verbal paradigms of the languages considered here provide unmistakeable evidence that the Maningrida languages, Burarra, Gurr-goni, Na-kara and Ndjébbana, are closely related genetically, and that these four languages share a genetic relationship with the other languages considered here: Ngandi and Nunggubuyu, Rembarrnga (and the other Gunwinyguan languages examined by AEH, Dalabon, Bininj Gun-wok, Jawoyn, Ngalakgan, Warray and Uwinymil), Mangarrayi, Marra, Kungarakayn, Gaagadju, and, probably, Warndarrang and Kunbarlang.

This wider picture gives a valuable perspective on the Maningrida languages, pointing to an innovation that distinguishes them as having a shared parent language below the level of Proto Arnhem. For all the other languages considered in this reconstruction, and in the AEH paper, there are reflexes of the column 1, *Past Punctual, allomorphs, for some or all cognate verb roots. In the Maningrida languages, there is no evidence at all of any reflexes of this category: the forms have been totally lost, with no trace in any of the languages.

Not only do the Maningrida languages share a TAM system (in its main features, at least), but the exponents of the Precontemporary and Contemporary tenses have been demonstrated to be cognate across all four languages. Furthermore, the Precontemporary allomorphs are clearly cognate with the set expressing Past Imperfective in many languages (and which has been labelled PI for Proto Gunwinyguan and for Proto Arnhem). The Contemporary TAM allomorphs are also fairly consistently related to another set of TAM categories across the other languages; this set is proposed as reflexes of the Habitual/Irrealis Past in Proto Arnhem.

I suggest that the evidence presented here leads to the conclusion that there was a systematic shift from the TAM system of Proto Arnhem to that of Proto Maningrida. Had the development of the Precontemporary/Contemporary tense distinction taken place independently in the four languages (or three, before Burarra and Gurr-goni separated), one would expect to find varying choice of the exponents of the new tenses, and varying retention or loss of the PP forms.

Even though loss has less evidentiary value in subgrouping than positive shared innovation, in this case it is not simply a matter of an isolated loss, but a coordinated series of losses and semantic shifts shared by all the M languages.

The proposed development is shown diagrammatically in Figure 1:

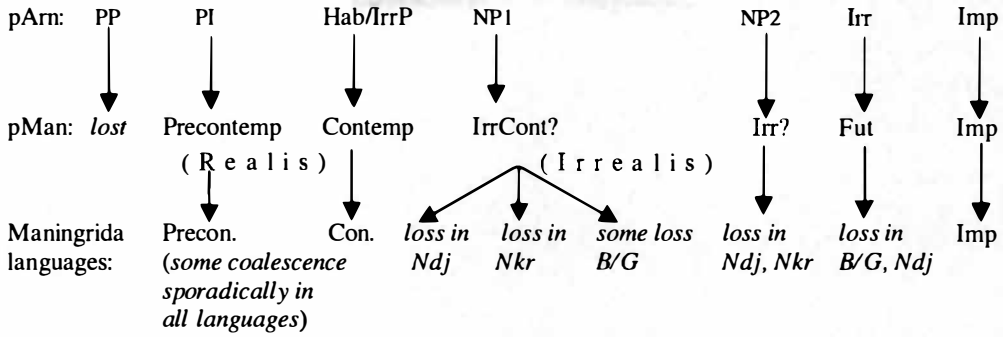

Figure 1: Proposed development of TAM categories from pArn > Man > B/G, Nkr, Ndj

Table 43: Summary of Proto Maningrida reconstructions

	Pre	Con (IrrPre)	IrrFutCon?	IrrNPre?	Fut?	Imp
**na* 'see'	**na-ni*	**na-jja*	**na-jjin*	**na-n*	**na-ya*	**na-ø*
**wu* 'give'	**wu-ni*	**wu-jja*	**wu-jjin*	**wu-n*	**wu-ya*	**wu-ø*
**jarnta* 'hurt'	**jarnta-ni*	**jarnta-ja*		**jarnta-n*		**jarnta-ø*
**pawu* 'leave'	**pawu-ni*	**pawu-ja*	**pawu-jin*	**pawu-n*		**pawu-ø*
**ra* 'spear'	**ra-ni*	**ra-jja*	**ra-jjin*	**ra-n*		**ra-ø*
**ma* 'get'	**ma-ngi*	**ma-ngka*	**ma-n*		**ma-ya*	**ma-ø*
**pengku/i ~ peku ~ pe* 'arrive, come out'	**pengku-ni*	**pengku-ya*		**pengku-n*		**pengki-ø*
**we/angku ~ we/aku/i ~ we* 'speak'	**wengku-ni*	**wengku-ya*		**wengku-n*		**wengki-ø*
**pungu ~ pungku* 'fall'	**pungu-ni ~ pungku-ni*	**pungu-ya ~ pungku-ya*		**pungu-n ~ pungku-n*		**pungi-ø ~ pungki-ø*
**po* 'go 1'	**po-ni*	**po-ya*		**po-ka?*		**po-y*
**ya* 'go 2'		**ya-ngka?*				**yV-rra*
**-yi-* Refl	**-yi-ni*	**-yi-ø*		**-yi-n*		**-yi-ø*
**juwe* 'die'	**juwe-ni*	**juwe-yi*		**juwe-n*		**juwa-ø*
**ja* 'put standing'	**ja-ngi*	**ja-ngka*		**ja-n*		**ja-ø*
**ngunyja* 'mimic'	**ngunyja-ngi*	**ngunyja-nga*		**ngunyja-n*		**ngunyja-ø*
**kajja* '(water) dry up'	**kajja-ngi*	**kajja-nga*		**kajja-n*		**kajja-ø*
**parnja* 'put down 1'	**parnja-ngi*	**parnja-nga*		**parnja-n*		**parnja-ø*
**jo* 'scold'	**jo-ngi*	**jo-ngka*		**jo-n*		**jo-ø*
**ro* 'burn 1'	**ro-ngi*	**ro-ngka*		**ro-n*		**ro-ø*
**kornta* 'cut'	**kornta-ngi*	**kornta-nga*		**kornta-n*		**kornta-ø*

yu~yo 'lie'	**yu-y*	**yo-ri*		**yu-ngV*	**yu-nya*	**yu-ø*
**ji~je* 'be standing'	**ji*	**ji-ri~je-ri*		**je-ngV*	**ji-nya*	**ji-ø*
**ni~no* 'sit'	**ni-ø*	**no-ri ~ *ninta*		**ni-ngV*	**ni-nya*	**ni-ø*
**ka* 'take'	**ka-ji?*	**ka-nyja/i*	**ka-nyjin*			**ka-ø*
**pa* 'eat, bite1'	**pa-Li/-La*	**pa-nga*		**pa-rti?*		**pa-y*
**ngempe/o* 'wake up, lift up'	**ngempe-Li*	**ngempo-nga*		**ngempe-rti?*		**ngempi-ø*
**jene* 'look for'	**jene-ri*	**jene-nga*		**jenV-rti?*		**jeni-ø*
**kinyi* 'cook 1'	**kinyi-Li*	**kinyi-nga*		**kinyi-rti?*		**kinyi-ø*
**wa* 'throw'	**wa-ri*	*wa-nga (~ ?wo-nga)*	**wa-rti?*		**wa-y*	
**ma* 'go along'	**ma-ri ~ mi-ri*	**ma-ø ~ ma-ma*		**ma-rti?*		**mi-ø*
**ngima* 'paint'	**ngimi-ri*	**ngima-ø*		**ngima-rti*		**ngimi-ø*
**kOtma* 'put down 2'	**kOtmi-ri*	**kOtma-ø*		**kOtma-rti*		**kOtmi-ø*
**numa* 'smell'	**numi-ri*	**numa-ø*		**numa-rti*		**numi-ø*
**rimi* 'hold'	**rimi-ri*	**rima-ø*		**rima-rti*		**rimi-ø*
**pu* 'hit'	**pu-ni*	**pu-rnta~ pu-rta*, or **pu-rnti ~ pu-rti*	**pu-n*		**pu-ø*	
**worlppu* 'hunt'	**worlppu-ni*	**worlppu-rti*	**worlppu-nga*	**worlppu-n*		**worlppu-ø*
**ngarnpu* 'be warm'	**ngarnpu-ni*	**ngarnpu-rti*	**ngarnpu-nga*	**ngarnpu-n*		**ngarnpu-ø*
**juppu* 'extinguish'	**juppu-ni*	**juppu-rti*	**juppu-nga*	**juppu-n*		**juppi*
**wirrppu* 'spray'	**wirrppV-ni*	**wirrppu-rti*	**wirrppu-nga*	**wirrppu-n*		**wirrppu-ø*
**ja~ji* 'eat, bite'	**ja-rra*	**ji-nyja*			**ji-ya*	**ya-ø*

Table 44: Summary of Proto Arnhem reconstructions

	PP	PI	Hab/IrrP	NP1	NP2	Irr	Imp
'see'	**na-y ~ na-ng*	**na-ni*	**na-jan*	**na-jini*	**na-n*	**na-yi*	**na-ø*
'give'	**wO-y*	**wO-ni*	**wO-jan*	**wO-jini*	**wO-n*	**wO-yi*	**wO-ø*
'spear'	**ra-m*	**ra-ni*	**ra-jan*	**ra-jini*	**ra-n*	**ra-yi*	**ra-ø*
'consume'	**ngo-ng*	**ngu-ni*	**ngu-jan*	**ngu-jini*	**ngu-n*	**ngu-yi*	
'hear'	**nga-ng?*	**nga-ni*	**nga-jan*	**nga-jini*	**nga-n*	**nga-yi*	
'follow, see, visit'	**wa-m*	**wa-ni*	**wa-jan*		**wa-n*		**wa-w?*
'get'	**ma-ny ~ miya*	**ma-ngi*	**ma-ngkan*	**ma-ni*	**ma-ng*	**ma-yi*	**ma-ø*

'go 1'		**po-ni*					
'go 2'		**ya-ngi??*	**ya-ngkan*	**ya-ngkani?*	**yV-rra?*		
Refl	**-yiny*	**-yi-ni*	**-yi-ø?*		**-yi-n*		**-yi-ø*
'die, be sick'	**thOwi-ng*	**thOwe-ni*			**thOwe-n*		
put standing'	**tha-ny*	**tha-ngi*	**tha-ngkan*		**tha-ng*		
'mimic(?)'		**ngunyja-ngi*	**ngunyja-ngkan*				*ngunyja-ng*
'scold'	**thO-ny*	**thO-ngi*	**thO-ngkan*		**thO-ng*		**thO-ng*
'chop'	**tho-ny*	**tho-ngi*	**tho-ngkan*	**tho-ni?*	**tho-ng*	**tho-yi*	
'burn 1'		**rO-ngi*	**rO-ngkan*		**rO-ng*		
'cut'					**kornta-n*		
'lie'	**yo-nginy*	**yo-y*	**yo-ri*	**yo-ngini*	**yu-ng?*		**yu*
'be standing'	**thi*	**thi-ny*	**thu-ra, *thi-ri?*	**thu-rlV*	**thi~?*		**thi*
'sit'	**ni-nginy*	**ni-ny*	**nu-ra*	**nu-rlV*	**ni~?*	**ni-ngi?*	**ni-ng*
'take'	**ka-ng~ *ka-nginy*	**ka-ni ~ ?*ka-nti?*	**ka-nyjan*	**ka-nyjini*	**ka-n*	**ka-yi*	
'eat, bite 1'		**pa-rli ~ payi-rli*	*pa-ngaN(VN?)*				**pa-y*
'cook 1'	**ki-nyeng*	**ki-nyiri*					
'burn 2'	**na(ya)-ng ~ *na-ny?*	**na-rli*	**na-nga ~ na-ja(N)?*	**na-ngana?*	**naya?*		
'throw'	**wa-ng*	**wa-ri*	**wa-nga*				**wa-y?*
(-)mV-	**ma-ny*	**ma-RV*	**ma-ø ~ *ma-ma*		**ma-R2(V)*		**mi?*
'hit'	**po-m ~ pong*	**pu-ni*	**pu-rnta*		**pu-n*		*pu-ø*
'eat, bite 2'		**ja-rring*	**ji-nyja*	*?*ji-nyjini*		**ji-yi*	

While the broad picture clarifies the status of the Maningrida languages as a separate branch of the Arnhem family (?), it raises a new problem with regard to the other languages included here. Ngandi and Nunggubuyu (which Heath (1990) has demonstrated form a branch of their own) were included in the reconstruction of Proto Gunwinyguan verbs by AEH. This paper shows that much of what has been proposed for Proto Gunwinyguan verbs is attributable to the parent language of a much wider grouping of languages, which I have called Proto Arnhem. It is also evident that, if all or any of Mangarrayi, Ngandi and Nunggubuyu, Kungarakayn and Kunbarlang are considered to be Gunwinyguan languages, then Proto Gunwinyguan must have had reflexes of the column 3 and 4 categories (and the existence in Rembarrnga, a core Gunwinyguan language, of reflexes of these categories for the stance verbs confirms that they must be reconstructed for Proto Gunwinyguan for these verbs at least). It is for this reason that I have labelled the row showing AEH's Proto Gunwinyguan reconstructions as 'AEH' rather than Proto Gunwinyguan.

To what extent, then, does 'Gunwinyguan' form a distinct grouping characterised by identifiable innovations? And what other branches can be demonstrated on the same basis?

One possible line of argument would be that, rather than the PP being lost in the development of Proto Maningrida, it may be an innovation that characterises the development of Proto Gunwinyguan. It is true that reflexes of the PP are not found (or at least are not clearly found) in Marra, Warndarrang and Gaagudju, nor in the Maningrida languages. However, as AEH note, cognate forms are found in the non Gunwinyguan languages Kamu and Tyemeri, and in (Proto) Pama-Nyungan, making this argument unsustainable.

Given the lack of a coherent picture of a deeper proto-level, it is unavoidable that genetic groupings proposed on the basis of shared morphology may actually turn out to be based on shared retentions from that higher proto-language. Unless the retention is in some way distinctively different from retention in other languages (as I suggest the retention of the Precontemporary and Contemporary forms in the Maningrida languages is), exclusive relationship will not have been shown. However, as my own experience has shown, proposing small language groupings with demonstrations of the putative evidence for that grouping is vital to building the full picture. It is almost certain that cognates to the forms proposed here will be found outside this comparatively large group of languages, and that this may change our view of which forms are retentions and which are innovations.

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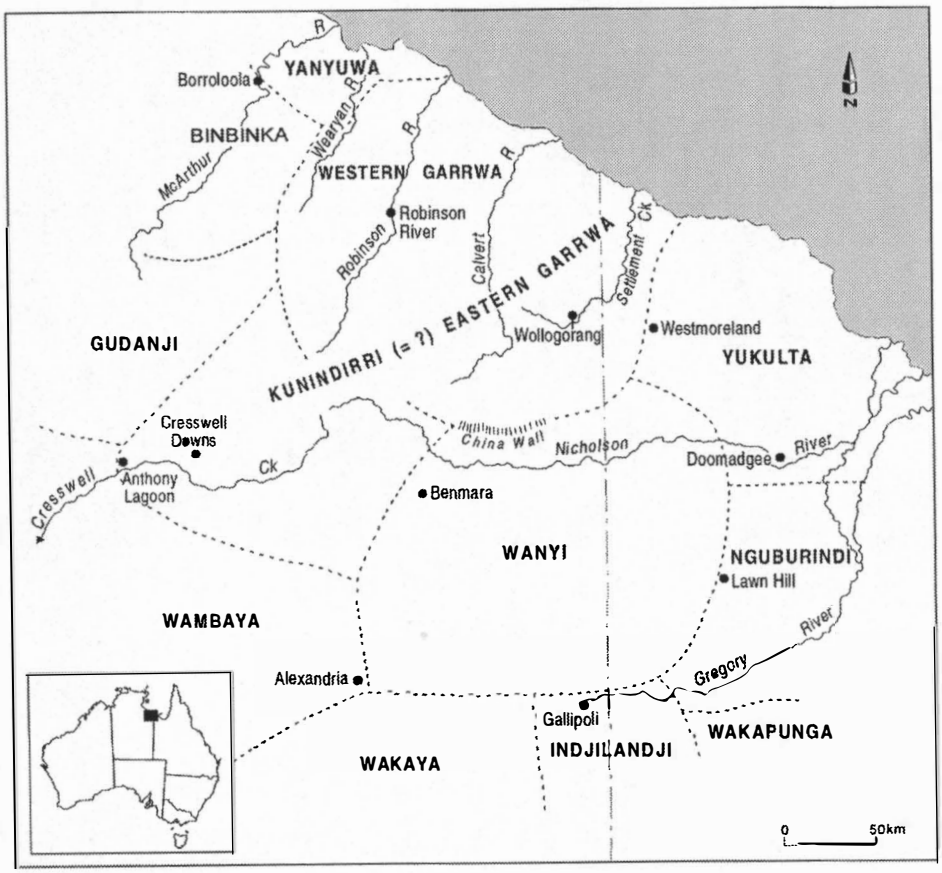
V. The Barkly



Map 4: Wanyi, Garrwa and neighbouring languages

Green, R. "Proto Maningrida within Proto Arnhem: evidence from verbal inflectional suffixes". In Evans, N. editor, *The Non-Pama-Nyungan languages of northern Australia: Comparative studies of the continents most linguistically complex region.* **PL-552:369-421**. Pacific Linguistics, The Australian National University, 2003. DOI:*10.15144/PL-552.369*

14 *Wanyi and Garrwa comparative data*

GAVAN BREEN

1 Introduction[1]

Wanyi and Garrwa are two languages of the Gulf Country of the Northern Territory and Queensland. The former is also spelt Waanyi, and the latter Garawa (also Karrwa[2] and Karawa). Their approximate location is shown on Map 4, which is based on data from Tindale (1974), John Bradley (pers. comm.) and other sources as summarised and briefly discussed by Trigger (1982:116–120). Most maps in the past have not shown Garrwa territory as extending as far north as the coast of the Gulf of Carpentaria. Tindale assigns the northern part of the area, along the coast as far as the Queensland border, to Yanyuwa, saying that the name Nyangga which is shown in this area on some maps is simply a Yukulta name for eastern Yanyuwa. Keen (1983:193), however, thinks the area may belong to Yukulta. Walsh's (1981) map shows Garrwa as including much of this country right up to the coast and separating Yanyuwa from Nyangga, but the justification for this is not made

1 I am grateful to Nick Evans and Rachel Nordlinger, who read an earlier version of this paper and gave many useful suggestions, to Luise Hercus, who supplied lexical items to fill in some gaps in my list, and above all to my several Wanyi and Garrwa language teachers, now deceased. My fieldwork on Wanyi and Eastern Garrwa was funded by the then Australian Institute of Aboriginal Studies (now AIATSIS). I was able to do some work with Western Garrwa and Yanyuwa speakers during the course of my employment with the School of Australian Linguistics.

Abbreviations used in this paper are: 1,2,3 - first, second, third person; Abil - abilitative; Abl - ablative, Adj - adjective; Adjr - adjectiviser; Alla - allative; C - any consonant; Concom - concomitant; Cont - continuing action; Dat - dative; Dem - demonstrative; Des - desiderative; DS – different-subject subordinate; Du - dual; Erg - ergative; Ex - exclusive; Fut - future tense; Gen - genitive; Hab - habitual; Imp - imperative; In - inclusive; Incho - inchoative; Inf - infinitive; Irr - irrealis; Interr - interrogative; Kin - follows a number to denote person of 'owner' of kinsman, e.g. 'mother-1kin' 'my mother'; Loc - locative; Neg - negative; Nom - nominative; Nonp - non-past; Obj: object; Op - operative; Pl - plural; Pn - pronoun; Poss - possessive; Pot - potential; Pres - present tense; Priv - privative; R - realis; Recip - reciprocal; Refl - reflexive; Sg - singular; SS – same-subject subordinate; Subj - subject; Transloc - translocative; UNM - unmarked; V - any vowel.

2 This is the correct spelling in the orthography for the language, but the spelling Garrwa is preferred by the Garrwa people.

Nicholas Evans, ed. *The non-Pama-Nyungan languages of northern Australia: comparative studies of the continent's most linguistically complex region*, 425–462.
Canberra: Pacific Linguistics, 2003.

clear. However, Bradley's conclusions, based largely on the place-names of the area, support the contention that this is Garrwa country (so that Walsh is basically right) and my map follows this (with Bradley's boundaries rather than Walsh's).

The name Kunindirri refers to a dialect about which little is known, but which certainly is to be grouped with Garrwa and Wanyi. Tindale's map locates it south of Garrwa, but this is not completely consistent with his description of its territory as comprising the headwaters of the Calvert, Nicholson and Robinson Rivers and south-west to Anthony Lagoon. In fact, the map seems to show the northern boundary of Kunindirri territory as being the divide between the watershed of the Robinson and the westernmost part of the watershed of the Calvert (to the north) and the watersheds of the Nicholson River and Cresswell Creek (to the south). Other sources quoted by Trigger also locate it in the vicinity of the Calvert and Robinson Rivers. However, present-day western Garrwa and Yanyuwa speakers refer to Garrwa as spoken in the Wollogorang area as 'Kundirri Garrwa' or sometimes 'Kunindirri Garrwa' or 'Garrwa-Kunindirri mix' (Trigger, Bradley and my own data). It may be that Kun(in)dirri occupied a band of country stretching from the headwaters of the Cresswell and Nicholson across to Wollogorang and Westmoreland. My map reflects this uncertainty; note the absence of a boundary line and the notation '(=?)' between the names Kunindirri and Eastern Garrwa. Clearly there is a difference between western and eastern forms of Garrwa; there are minor differences in grammar and Eastern Garrwa has more in common with Wanyi in its lexicon. But it is not possible to say whether Eastern Garrwa and Kunindirri are different, or simply two names for the same dialect.

Neighbouring languages are as shown on the map. As noted above, the nature of Nyangga is not clear; the name is not known to present-day informants. Locations of some of the boundaries on the map, notably that between Wakaya and Yinjilanji, involve a certain amount of guesswork.

Section 2 gives brief notes on phonology and phonotactics. In §3 the lexicons of Wanyi and Garrwa are briefly compared. Wanyi and Eastern Garrwa data are from my fieldwork (except that Luise Hercus has been able to fill in a few holes and clear up some obscure points from her data on Wanyi). Western Garrwa sources are the published work of the Furbys; Menning and Nash (1981); and Garrwa people with whom I had contact during my two two-week periods in Borroloola. In §4 there is a brief comparison of the vocabularies with those of some neighbouring languages. In the following sections aspects of the morphology of the two languages will be compared; virtually all the Western Garrwa material comes from the Furbys' published work (with some slight reanalysis by me) and all of the Eastern Garrwa and Wanyi material from my fieldwork.

Garrwa and Wanyi are superficially very similar, sharing some of the phonetic peculiarities of languages of the area such as palatovelar consonants (perhaps better analysed as clusters of palatals and velars) and frequent clusters of palatal and bilabial stop, and also a substantial amount of vocabulary which is not found in neighbouring languages. O'Grady, Voegelin and Voegelin (1966) classified them as forming together the Karwan[3] Language Family (Garrwa being the Karwic Group and Wanyi the Wanyic Group). Osborne on the other hand (quoted in Oates & Oates (1970)) regarded them as dialects of the one language. Several papers have been published on Western Garrwa by Christine E. Furby and the late

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3 Spelt by them as Karawan; respelt Karwan by Blake (1988). I have used the name Yanyi (the word for 'language' in these languages) for the group for a number of years (as the name for their folder on my computer) and propose this as a name for the group that makes no implications regarding its status and does not imply primacy for either language.

E.S. Furby, the Summer Institute of Linguistics couple who worked on the language for many years. Another SIL couple, Alan and Lucy Rogers, and also NT Education Department linguists Hugh Belfrage and Rebecca Green, have more recently been involved with this dialect. Ilana Mushin has a Learner's Guide in preparation. Virtually nothing has been published on Wanyi; there is a wordlist in the Sourcebook of Central Australian Languages (which also has one on Garrwa), while Blake (1988, 1990) discusses the pronouns of the two languages. Charles Osborne (1966) has deposited a sketch grammar with the Australian Institute of Aboriginal Studies. I have done fairly substantial fieldwork with the late Mrs Ivy George (of Riversleigh) and a little with other old Wanyi speakers, recorded a few hours of Eastern Garrwa, mostly from the late Andy Wyndham (then of Dajarra), and taught a couple of two-week literacy courses in Western Garrwa to small groups of speakers and partial speakers in Borroloola (during which I collected a little vocabulary and checked on a couple of grammatical points). My analysis of Wanyi is very incomplete. Hercus is currently working on Wanyi, and Mary Laughren is cooperating with her in working with two newly located speakers. Menning and Nash (1981) list other unpublished sources of Garrwa and Wanyi data.

2 Phonology

The phoneme inventory of Wanyi is shown, using orthographic symbols, in Table 1.[4]

The long vowels are possibly contrastive only in the opposition between nominative case of nouns with short final vowel and ergative with the vowel lengthened. Apparently phonemic long vowels are so rare elsewhere as to be treated with suspicion, although they are currently written in a few words. Note, however, that non-phonemic lengthening of the stressed vowel of disyllabic words is a feature of Wanyi (hence the spelling Waanyi).

Table 1: Wanyi Phonemes (Note that the orthography uses *nj* instead of *nyj* for the homorganic palatal nasal–stop cluster.)

	bilabial	velar	apical	palatal	open
stop	*b*	*k*	*d*	*j*	
nasal	*m*	*ng*	*n*	*ny*	
lateral			*l*	*ly*	
tap			*rr*		
glide	*w*		*r*	*y*	
short vowel	*u*			*i*	*a*
long vowel	*uu*			*ii*	*aa*

The Furbys analyse Garrwa as having an alveolar/ retroflex opposition in the apicals, but I believe they may have been misled by the frequency of phonetically retroflexed apical consonants, which represent the unmarked realisation of the apicals and so a very noticeable feature of the language (as of Wanyi). There does at times appear to be a very definite contrast, for example, between *nanda* 'that' which is not obviously retroflexed, and *banda* 'camp' in which there is a very clear transition to a retroflexed *nd*. I attribute this contrast to

[4] I do not regard the tabulation of vowels separately from consonants and with reference to a different set of features as particularly useful for most Australian languages. They are therefore included in the same table.

two factors; one is the fact that *nanda*, as a demonstrative, is not normally as strongly stressed as a noun like *banda*, and so the retroflexion is not so obvious. The other factor, probably more significant, is the fact that in *nanda,* and generally in words with initial apical, the initial consonant is retroflexed, as well as the *nd*. To understand the difference between perception of the retroflexion in these two words we need to consider some aspects of their articulation, as follows:

banda, initial bilabial stop, followed by a vowel during the course of which there is a transition from the rest position of the tongue during the initial consonant to a retroflexed position in anticipation of the following apical cluster, then the retroflexed apical nasal and stop, and finally an unstressed low central vowel. It is the transition from the low position of the tongue to the retroflexed configuration during the course of the vowel that provides a strong cue to the retroflexion for the listener;

nanda, initial retroflexed nasal, followed by a vowel with tongue in or near the retroflexed configuration throughout, then nasal, stop and vowel as for *banda.* The change in tongue position during the vowel that provides the cue to the retroflexion in the case of *banda* is absent. Since there is no such cue to the retroflexion of an initial consonant (which is always much more difficult to hear, and in many languages non-contrastive) the observer tends to overlook the retroflexion. I have, therefore, concluded that there is no phonological contrast between two apical series and have altered the spelling of words in examples quoted from the Furbys to remove indication of retroflexion.[5]

The Furbys also have a palatovelar series, as also Kirton and Charlie (1978) have proposed for Yanyuwa and Chadwick (1975) for Jingulu and some other languages of the area. Wanyi has a palatovelar stop, but this seems to be best analysed as a phonemic cluster /jk/ (parallel to the common cluster /jb/). This seems to apply also to Eastern Garrwa. For the purposes of this paper the Furbys' analysis is accepted for Western Garrwa.[6] The spelling *yngk* is used for nasal-plus-stop clusters the Furbys write as palatovelar, and *jk* for their palatovelar stop; no examples including intervocalic palatovelar nasals are quoted (but it would be written *yng*).

Wanyi words are of at least two syllables (with four known exceptions: two pronouns, a particle and a conjunction) and all begin with a single consonant. Almost all stems end in a vowel (but note that a suffix *-n* is frequently added to stems; see §5.1). Permissible stem-final consonants, all rare, include /l/, /ny/ and /rr/. It is not yet clear whether all occurrences of final *n* and *ny* on inflected forms are due to the main informant's habit of dropping finalvowels; many are. Consonant clusters include nasal + homorganic stop, apical nasal + non-apical stop, /nyb/, /l/ or /rr/ or /j/ + peripheral stop, /l/ (rarely) or /n/ + peripheral nasal,

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5 Recent observations by Rebecca Green (pers. comm.) show, however, that this question is not yet settled.

6 My impression, from my limited experience with Western Garrwa and Yanyuwa, is that the sounds analysed as palatovelar stop and palatovelar nasal are better analysed as clusters. The former is, of course, analysed as a cluster /jk/ as it is for Wanyi; this patterns with the common cluster /jb/. The nasal is rare, but I have heard it (from a good Yanyuwa speaker) as a clear [nʸŋ] cluster and so would analyse it as /nyng/. This is parallel to the /nym/ cluster. The sound analysed as a palatovelar nasal–stop cluster or prenasalised stop seems to be indistinguishable from /nyk/ and I would analyse it so. This patterns with a /nyb/ cluster. Kirton and Charlie (1978) do include clusters /djg/ (= my /jk), /njŋ/ (= my /nyng/) and /njg/ (= my /nyk/), but say that they are marginal and are merging with the palatovelar phonemes.

A possible alternative to /jb/ and /jk/ is to analyse the first member as a glide /y/: thus /yb/ and /yk/. There is some justification for this in the morphology of Wanyi (at least), and Andrew Butcher (pers. comm.) suggests it for Western Garrwa on phonetic grounds. Kirton and Charlie (1978) reject this for Yanyuwa, and the existence of an unambiguous syllable-final palatal stop but no syllable-final glides in the language supports their position.

/nym/, /lw/, /rrw/ and, intermorphemically, /ld/. Some others may occur rarely, such as /nyk/, /nyng/ and /nny/, which do occur in Garrwa. Garrwa phonotactics are similar; see Furby (1974) (and note my reservations concerning her analysis of the phonology).

3 Lexicon

Provided in an Appendix is a comparative list of one hundred and seventy-nine items in Wanyi and Garrwa. The list is not complete for Eastern Garrwa, and many items are not well attested.

Items which are the same in the two full lists (Wanyi and Western Garrwa), or slightly different but obviously cognate, amount to about 50%. Counts on the verbs only, and on the words in particular semantic groups, all result in fairly similar figures, except that body parts give a rather high figure (about 70%) and the small group of adjectival items a very low one of 8%.

Eastern Garrwa forms were available for 154 of the items in the list. In about half these cases (76) the Wanyi, EG and WG word are all the same; in a few cases (11) there are two words in EG, one = Wanyi and one = WG; for 41 words EG = WG and is different from Wanyi; for 14 EG = Wanyi and is different from WG and in 12 cases EG is different from both Wanyi and WG. This gives a cognate percentage of 83 between Eastern and Western Garrwa, and 66 between Eastern Garrwa and Wanyi.

These figures suggest that Eastern and Western Garrwa are dialects of one language, and that Wanyi is either a more distant dialect of the same language or a closely related language.

4 Comparison with other languages

One or both of the wordlists given above were compared as far as possible (using only readily available material) with wordlists for neighbouring languages Yanyuwa, Jingulu, Gudanji, Wambaya, Wakaya, Bularnu, Warluwarra, Kalkatungu, Minkin, Yukulta, Kayardild and the Mayi languages (as a group).[7] No attempt was made at first to compare grammatical material systematically, but I have now referred to some correspondences pointed out to me by readers of earlier drafts of the paper[8] and followed this up with a short study of possible relationship to the Mindi languages. See Blake (1988, 1990) for some relevant grammatical material, especially on the pronouns.

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7 The count for Kayardild was done by Nicholas Evans, using his own material on that language. Sources for other languages were Menning and Nash (1981) for Yanyuwa, Gudandji and Wambaya, Chadwick (1975) for Jingulu, Blake (1979) for Kalkatungu, Coward (1886), Curr (1886), W.T. (1896) and Turnbull (1911) for Minkin, Keen (1983) for Yukulta, Breen (1981) for the Mayi languages, and my own unpublished material for the others.

8 All footnotes below which contain references to Evans (1995) or Nordlinger (1998) result from (and often quote) comments on an earlier draft by Evans or Nordlinger, respectively.

Table 2: Cognate percentages between Wanyi/Garrwa and neighbouring languages

Language pair	% cognate items	
Garrwa/Yanyuwa	*28*	(verbs 9)
Wanyi/Yanyuwa	*13*	(verbs 6)
W. Garrwa/Jingulu	*12*	(verbs 4)
E. Garrwa/Jingulu	*15*	(verbs 9)
Wanyi/Jingulu	*18*	(verbs 13)
Garrwa/Gudanji	*25*	(verbs 20)
Wanyi/Gudanji	*29*	(verbs 29)
Garrwa/Wambaya	*17*	(verbs 20)
Wanyi/Wambaya	*21*	(verbs 20)
Wanyi/Wakaya	*12*	
Wanyi/Bularnu	*11*	
Wanyi/Warluwarra	*6*	
Wanyi/Kalkutungu	*2*	
Wanyi/Minkin	*4*	
Garrwa/Minkin	*4*	
Garrwa/Yukulta	*4*	
Garrwa/Kayardild	*10*	
Wanyi/Kayardild	*8*	
Wanyi/Mayi group	*4*	

Percentages of items cognate (based on about 100 to 160 comparable items) are as listed in Table 2. The low figure for verbs (which are — at least in some areas — less likely to be borrowed than nouns; see Breen (1990:154–156) and note also the figures given for the languages in the former 'Bureran', 'Kunividjian' and 'Nagaran' families by Green elsewhere in this volume) for the Garrwa/Yanyuwa pair, as well as the low overall figures for Wakaya, Bularnu and Warluwarra (which are related to Yanyuwa) suggest that the fairly high overall figure for Garrwa/Yanyuwa is due to borrowing rather than genetic relationship. The fairly high figures for comparisons with Gudanji and Wambaya are, on the other hand, supported by the similar figures for the verbs. These are based on only twenty-five or so verbs, however, so a second count was made for Wambaya using the vocabulary in Nordlinger (1998).[9] This gave 49 comparable verbs. The figures this time were: Wanyi/Wambaya overall 25% (173 words), verbs 23%, Western Garrwa/Wambaya overall 20% (172 words), verbs 15%. Including Eastern Garrwa words would lift the latter two figures to 27 and 17. The verb figures are somewhat lower than the overall figures.

Borrowing clearly plays a part in the degree of similarity between Garrwa/Wanyi and Wambaya/Gudanji; the only clear loanword is *nyilangunya* which (as Rachel Nordlinger, pers. comm., pointed out) is analysable in Wambaya, but there are a number of areal items, found also in other language groups such as Ngarna (or Warluwaric) and Arandic. These include *kudulu* 'heart', *malambi* 'liver', *nyili* 'porcupine (echidna)', *kananganja* 'emu', *walanybirri* 'pelican', *jukuli* 'boomerang' and *karrinja* 'be standing'. Some of the similarities in grammatical forms noted below are areal too, and probably do not indicate

9 These figures were modified slightly after Rachel Nordlinger (pers. comm.) pointed out to me some semantic correspondences I had not noticed.

anything more than a rather long contact between speakers of Yanyi and West Barkly languages. These are summarised in the following paragraph.

Blake (1990) found no reason to think there was a close relationship between the West Barkly languages and the Yanyi group. He based his conclusions mainly on the differences between the pronouns and the function morphemes, and these certainly provide strong evidence against a relationship. Even where the Yanyi pronouns exhibit some resemblance to Blake's (1988:7) 'Northern Pronouns', such as 2pl *narri*, they do not particularly resemble the Barkly (here beginning with *gurr* or *girr*). One point of resemblance, as Blake points out, is between the Barkly verbal infinitive and the Yanyi realis verb forms, both based on a formula 'root+*j*+*bV*'.

Some resemblances not noted by Blake are referred to in footnotes throughout the paper (and see also the discussion of reflexive/reciprocal marking in §5.3). Of these, a number of cases involve items found in other language groups, clearly or likely spread by borrowing, including *bibiyurru* from Wambaya and items involving interdental consonants, maybe from the Ngarna languages. Several cases involve features of only one of the Yanyi languages. With these reservations, it is noted that these resemblances (mostly pointed out by Nordlinger; see also Nordlinger 1998:159–160) do provide evidence suggesting a possible relationship between Yanyi and West Barkly languages.

Blake (1990) also gives some cognate counts, based on a somewhat smaller number of items than my counts and with a different source for the Barkly languages. The figures he gives are suggestive: despite the fact that Wanyi is generally further (geographically) from the West Barkly languages than is Garrwa (although it has a common boundary with Wambaya, albeit probably not as long as suggested by Blake's map, which does not show Kunindirri), the cognate figures for the West Barkly languages with Wanyi are consistently higher than with Garrwa (Blake 1990:60). If the figures were inflated by borrowing one would expect them to be higher for Garrwa.

Since some of this evidence tended to show that the Yanyi languages might be related to the West Barkly languages, I carried out a cognate count on a sample of Jingulu vocabulary with about twice the number of comparable verbs, with the results given in the above list. These figures suggest that the Yanyi languages are not closely related to Jingulu (and hence to the West Barkly group). However, a cognate count for Jingulu and Gudanji gave figures of 21% overall and 13% for verbs, which suggests that they too are not closely related. Since the data, especially on noun class markers and pronouns, presented by Chadwick (1979) seem to show fairly convincingly that Gudanji, Wambaya, Binbinga and Ngarnga are genetically related to Jingulu, the conclusion that presents itself is that the rate of replacement of verbs is in fact higher than the overall rate of vocabulary replacement in this language group. This conclusion, unpalatable in the light of our knowledge of other comparable situations, needs further study; it may be that the spread of the *jbV* verbs is relevant in some way. In any case, the fact that Wanyi seems to show more similarity to the West Barkly languages than does Garrwa, and East Garrwa more than West, is relevant to the prehistory of these languages, and their relationships need to be studied in more detail.

Chadwick (1984) has shown that the West Barkly languages are genetically related to the Yirram languages, Jaminjung, Ngaliwurru and Nungali, of the lower Victoria River. If, then, the Yanyi languages are related to the West Barkly languages, they must also show evidence of relationship to the Yirram languages. The most convincing items would be shared by Yanyi and Yirram languages but not by intervening languages. Chadwick's case for the existence of a Mindi Group (= West Barkly + Yirram) rests heavily on similarities in the pronouns and in the noun class marking (although only one Yirram language has noun

classes now). Since the Yanyi languages have little similarity in pronouns to even neighbouring West Barkly languages, and do not have noun classes, we are starting way behind scratch. However, I went through Chadwick's comparative vocabulary and made a list of 'look-alike items' (to use his apt term). My initial list contained 56 items — a fairly substantial proportion of Chadwick's 159. Seven were quickly rejected as being just too unlikely; for example, Wanyi *dara* Nungali *durib* 'dog' was rejected because *du-* is a gender prefix in Nungali (although not marked as such in this word) and the other Yirram languages have *wirib*, suggesting a proto-form **-rib*. Of the remaining 49 items, eighteen are related to forms found in the Ngumbin languages (especially Gurindji), which separate the two halves of the Mindi Group. A few others are eliminated because of the absence of further evidence, such as linking forms, to connect vaguely similar forms (such as *ngurranyun* and *ngulya* 'blood', *wunba* and *budaj* 'wind'). The remainder are listed in Table 2; they include some words where there is a Gurindji or other Ngumbin correspondence but none in West Barkly. Words lacking a West Barkly correspondent are listed first. Gurindji material is from McNair and McNair (1991) and from Menning and Nash (1981). Material from other languages not listed in the first paragraph of this section is from Menning and Nash. English translation given in the first column is that for the Yanyi word; others have the same translation unless noted otherwise.

One notable feature of this list is that it includes only two verb correspondences, neither of which looks particularly convincing. It would be interesting to know whether the observation that verbs are a better indication than nouns of genetic relationship applies to comparisons of languages where one has many verbs while the other has few verbs and many pre-verbs. Other items which look unconvincing for one reason or another are 'this', 'son', 'face', 'tree', 'down', 'man' and 'head'. This leaves thirteen, or about 8%. This could probably be increased somewhat with study of Ngumbin lexica, which would show that certain items that it has in common with Mindi and Yanyi are not found in other Ngumbin languages and so are probably loans into Gurindji.

There are a handful of bound morphemes which involve possible correspondences:

- G *-(wa)nyi* / N *-rni* (masc.), *-ngayi* (fem.) ergative;
- Wa *-nV* and G *-na* ~ *-ina* (see Table 4) / J, Ng *-ni/-di/-gi*, N *-ni* locative;
- Wa *-wuny i* / J, Ng *-ngunyi*, N *-ngung* ablative;
- G *-yi* (see §7.1) past / J, Ng *-nyi* allomorph of remote past; N *-yinji*, *-iyi*, *-nyi*, *-anyi* are four of nine past tense allomorphs;
- Wa optional *-wa* on imperative to denote permission / J, Ng *ba-*, N *wa-* imperative.

As noted below (§5.3), reflexive/reciprocal marking is a point of resemblance between Yanyi and West Barkly languages; this resemblance does not extend to the whole Yirram group.

Considering especially the lack of correspondences in the pronouns, I conclude that the Yanyi languages are not more closely related to the Mindi languages than to other groups. The matter is worthy of further study, however.

Table 3: Comparison of vocabulary with Yirram languages

	Yanyi	*Yirram*	*West Barkly*	*Others*
this, here	Wa *nawu*	N *-nyambu*		Gr *nyawa*
sister	G *maju-*	N *nyana-maj*		
son (of woman?)	Wa *ngalu*	J, Ng, N *ngalawiny* 'son'		Gr *ngalawuny* 'child of man' (*ngalayi* 'child of woman')
face, forehead	Wa, G *wali*	Ng *nungali* 'forehead'		Gr *walu* 'hill, head'
fly	Wa *kunama* G *kunima*	J, Ng, N *gunama*		Ngarinman *kunama*, Mudbura *kununga*
tree	Wa, G *kunda*	J, Ng *garndi*		Gr *karnti*, Yn *wurnda*, Yj *kurndu*
down	Wa, G *wajka*	N *wiyagu*		Yn *wajka*
not	G *kudarri*	J, Ng, N *gurrany*		
hear	Wa, WG *manku*	J *manggulag*		Wl *manka* 'ear', Jr *marnkirrkirr* 'ear'; Wrl *marnkarru* 'ear'
cry	Wa *ngindi*, G *ngindu*	J, Ng, N *ngilijga*		
G man, Wa body	*nganinyi*	N *du-ngurnin* 'man'	Wm, Gu, Bi *ngarninj* 'body'	
name	Wa, G *niji*	Ng, N *nij*, J, Ng *jinij*	Ji *liyijgu*, Nn, Bi *riyijga*, Gu *niyija*	
body	Wa *kunjunu*	N *gunyju*	Wm, Gu *gunyju* 'meat'	
head	G *kulaji*	Ng *gulaga*	Gu *gula*	Yn *wulaya*, Yj *kulaa*, Wk *kula* 'hair'
eyebrow	Wa *bijibiji*, G *yibijibiji*	J, Ng *yibij-yibij*, N *ma-bijibijib*	Ji, Nn *yibijibiji* Wm, Gu *ibijibiji* 'eyelash'	
spittle	G *jabula*	J *jawul*	Gu *jabula*	Gr *jupak* probably not cognate
hungry	Wa, G *balikaya-*	N *walidgug*	Ji *baliga*, *balijba*, Nn *balijijbi*, Wm, Gu, Bi *baliji*	Yj *bilikV*
grass	Wa *wanda*	J, Ng *warnda*, N *nu-warnda*	Gu, Bi *warnda*	
sunset	G *ngabungabu*	J *gabugabu*, Ng *gababugad* both 'afternoon'	Gu *ngabungabu* 'afternoon'	
firestick	Wa, G *kungkala*	Ng *gunggala*, N *nunggala*	Ji *gunggulurni*, Nn *gunggaluma*, Wm, Gu, Bi *gunggala*	
south	Wa, G *nginiri*	N *ngarnigu*	Ji *ngarni*, Nn *ngirniili*, Wm *ngirnii*, Gu, Bi *ngirniwi*	Wk *ngerlim-*
west	Wa, EG *bayingu*, WG *bayungu*	J, Ng *buyagu*, Ng *biyagu*, N *wiyagu*, *ra-wuyagu*, *ju-wuyagu*	Nn *ayungu*, Wm, Gu, Bi *bayungu*	

5 Nominal morphology

5.1 Noun inflection

The inflectional suffixes found on nouns in Wanyi and Western Garrwa are compared in Table 4. Some notes on Eastern Garrwa forms are in the next paragraph.

Table 4: Comparison of noun inflections

	Wanyi	*(Western) Garrwa*
Nominative	-Ø	-Ø
Operative (Wanyi)/ Ergative (Garrwa)	-*V* [i.e. lengthening of final vowel] (most words) -*ni* (after dat suffix) -*yi* (some kinship terms)[10] -*wa* (2kin kinship terms) -*nyi* (after concom)	-*wanyi* (most words) -*nyi* (on adjs ending in *rra*, after du, pl, concom and -*yurri* 'deceased'; on sg gen pronouns)
Dative	-*nyi* (after final *a*) -*yanyi* (after final *i* and *u*) -*kanyi* (after -*yudu*)	-*nyi* (most V-final words) -*anyi* (most C-final words) -*ngkanyi* (noun stems ending in *anyi* or *unyi*, sg gen pronouns)[11] -*yngkanyi* (adj stems ending in *nyi*, noun stems ending in *inyi*, *bannyi* 'meat') -*yngka* (adjs ending in *rra*; after du, pl and concom)[12] -*wa* (after -*yurri* 'deceased')
Locative	-*nV* (after final *V*) -*wu* (some kinship terms)[13] -*rrini* (some words)	-*na* (most *V*-final words) -*ina* (most *C*-final words) -*nyina* (adjs in *rra*; after du, pl and concom; sg gen pronouns)
Allative	-*wurru* (most words) -*urru* [with deletion of stem-final vowel] (most words of more than two syllables with final *i*)	-*yurri* (adj stems; noun stems with final *C* or *i* or after Abl suffix) -*rri* (noun stems with final *a* or *u*) -*yngkurri* (adj stems with -*nyi* or -*rra*, noun stems with final *inyi*; after du, pl, concom) -*ngkurri* (sg gen pronouns)
Ablative	-*wunyi* (most or all) -*wunybuku* (rare, possibly different function)	-*nanyi* (= Loc + Dat)
Transloc	-*yangka*	-*yangka* (most) -*njaka* (sg gen pronouns)
Tactile	-*nanja*	-*nanyi* (= Abl)
'up to'[14]	-*wada(a)*	-*wada*
'from' (to escape)[15]	-*mukunu*	

10 In particular, perhaps all and only kinship terms with 1kin (first person possessor) marking.

11 -*nkanyi* is the form of the perlative case in Wambaya, which encodes meanings such as 'across, along, through'. (Nordlinger 1998:91)

12 -*nka*/-*ngga* is the regular DAT form in Wambaya (Nordlinger 1998:87).

13 In particular, perhaps all and only kinship terms with 1kin (first person possessor) marking.

14 For example, *Wabuda mujiwada ngakindu* 'The water's up to my knees'.

15 See (6) and (7) for examples.

The main dative allomorphs of Eastern Garrwa are *-nyi* and *-yanyi*; an exceptional case is *kujanyi* 'tooth' whose dative seems to be *kujanykany*, while *-nja* is attested following the plural suffix *-muku*. The conditioning factor for the other two is not known; both are attested on *mama* 'food' (although perhaps this actually takes *-anyi*, not *-nyi*), *-nyi* also on *wawarra* 'child', *dungala* 'stone', *julaki* 'bird', *wudumukiji* 'tomorrow', *wabuda* 'water' and *kulunganja* 'son-in-law' and *-yanyi* on *mandaki* 'white man', *burrurri* 'man', *bajangu* 'dog', *jandanyi* '(man's) child' and *bannyi* 'meat'. The ablative in Eastern Garrwa is *-nanja*. Other inflectional suffixes are essentially the same as in the Western dialect, but some of the less common allomorphs in the latter have not been attested in the Eastern dialect.

In both Wanyi and Eastern Garrwa a suffix *-n* is frequently attached to vowel-final noun stems, both in citation form and in sentences. No function is known for this and it is not glossed. Compare the *n* occurring on the pronoun form of some suffixes; for example, *-mungkuji* (suffixed to place names and other nouns) ~ *-nmungkuji* (suffixed to demonstratives) 'origin' in Western Garrwa.[16]

A notable difference in usage between Wanyi and Garrwa is in the marking of instrumental function on nouns. The most common system for Australian languages is that instrument is marked by the same suffix as is ergative (and this combined function has been at times, and is here, glossed OP for operative) and this is the situation for Wanyi. A less common alternative is that instrument is marked by the locative suffix, and this is the situation for Garrwa. Thus we have the following contrast:

Wanyi:	ergative + instrument		locative
Garrwa:	ergative	instrument + locative	

Also, in both languages, instrumental function may also be fulfilled by concomitant (having) plus operative or ergative (as the case may be). (1) is from Wanyi and (2) and (3) from Eastern Garrwa; see also Furby and Furby (1977b:29, 30, 41).

(1)	*Burrurri*	*daba*	*nangka,*	*jukuli-i,*	*barrku-u.*
Wa	man	hit:R	3sg:REFL	boomerang-OP	nulla.nulla-OP
	'Men used to fight with boomerangs and nulla-nullas.'				

(2)	*Ja-nga*	*daba*	*kunda-yudi-nyi.*
EG	FUT-1sg	hit:R	stick-CONCOM-ERG
	'I'll hit him with a stick.'		

(3)	*Nganinyi-wiya*	*bula-ngka*	*daba*	*ngubungu-na.*
EG	man-DU	3du-RECIP	hit:R	boomerang-LOC
	'Those two men were fighting with boomerangs.'			

The 'ablative' form *-wunybuku* occurs only twice in the corpus, both times with the function illustrated in (18) below. The suffix *-wunyi* occurs once in the published Western Garrwa material, with the translation 'after' (which is one of the functions of *-wunyi* 'ablative' in Wanyi).

(4)	*Munganawa*	*barri*	*ngayi*	*jila*	*langki*	*dinu-wunyi.*
WG	tomorrow	um	1sg:PAST	go:R	north:ALLA	dinner-AFTER
	'After dinner the next day I went towards the north.' (For 'um' see note after (47)).					

16 Nordlinger (pers. comm.) suggests that this suffix may be the source of the initial *-n* in Wambaya suffixes *-nmanji* 'ALLA' and *-nnga* 'ABL'.

Translocative is so named by Furby and Furby because it denotes motion past something; however, in the Wanyi corpus it is more frequently translated 'near'; thus *wunbayangka* 'near the house' or '(motion) past the house'. The suffix named 'Tactile' is, to quote Furby and Furby (1977b:42), 'used to explain the part of the body of a human or an animal by which an action is transferred to the whole'. Thus, for example, in Wanyi, *bambularananja* '(pulled the goanna out of the hollow) by the tail', *maninanja* '(held him) by the hand'. My corpus does not include any other uses. The comparison here is interesting: Western Garrwa uses its ablative suffix, *-nanyi*, Eastern Garrwa uses its ablative, *-nanja*, and Wanyi uses a suffix with the same form as the Eastern Garrwa ablative but with a specialised function. (And note the comments in the previous paragraph.)

The suffix *-wadaa* is attested on only two words in Wanyi: *ngaluwadaa* 'up to my chest' and *murrungkuwadaa* 'up to my knees'.

(5)	*Winja-kurru-na*	*kanawa-rra?*	*Nangkurru ngalu-wadaa.*
Wa	where-ALLA-?	high-?	here:ALLA chest-UP.TO
	'How tall is he?'		'He's up to here on my chest.'

The 'escape' suffix, *-mukunu*, is more common; two examples are:

(6) *Mularri nana kukulikukuli-mukunu.*
Wa pick.up:IMP that bindi-eye-ESCAPE
'Pick up that (baby) from the bindi-eyes (prickly plants).'

(7) *Jariya ngamba wurrarra-mukunu.*
Wa enter:IMP 1pl.in wind-ESCAPE
'We'll go inside out of the wind.'

Table 5: Comparison of noun stem formatives

	Wanyi	(Western) Garrwa
Dual	*-wiya*	*-wuya* (Eastern *-wiya*)
Plural	*-darra*[17]	*-muku*
Other	*-ya* (as in *dandayana* 'on the other side' with *-na* locative)	
Concomitant (having)	*-yudu* (most, including *mukura*) *-adu* (on *mukura* 'spear', *ngaka* '1sg:REFL') *-udu* (on infinitives)	*-yudi* *-njudi* (on dem and interr pronoun stems)
Like	*-waya* (e.g. *burrurriwayan* 'like an Aboriginal person' with suffix *-n*)	(*ngamungku*, a preposition)
Sympathy	*-yangkurru* *-yurru*[18]	*-yurru* *-rru* *-ngkurru* (on poss, dem and interr pronouns)

17 *-rdarra* is a suffix in Wambaya encoding 'a group of' e.g. *juwa-rdarra* 'a group of men' (Nordlinger 1998:79). In Jingulu *-rdarra* is the regular pl marker (free form) (Nordlinger, pers. comm.; see Pensalfini 1997:263–270).

18 Normally suffixed to a human or kinship noun with the meaning 'deceased', but in one example in Wanyi *bibiyurru*, translated 'poor old sister', refers to a sick person. *Bibiyurru* means 'deceased person' in Wambaya (Nordlinger 1998:271).

Origin	*-mungkiji*[19] (e.g. *Bujabujamungkiji* 'person from Bujabuja')	*-mungkuji* (but note Furby 1972:14 *mungkiji*) *-ŋmungkuji* (on dems)
1kin	*-nyi* (e.g. *bawanyi* 'my elder brother', used if no other suffix)	
2kin	*-naku* (e.g. *ngadanaku* 'your mother'; inflectional suffixes can follow)	
2kin, 3kin?[20]	*-nganja*	*-nganja*
kin dyad[21]	*-kula*	*-kula*
times		*-ka* (see Furby & Furby 1977b:46 ex.9)
still[22]		*-nnga*[23]
season[24]		*-wala*

5.2 Derivational and other nominal suffixes

These are compared in Table 5. Each language seems to have a number of morphemes which have no correspondence in the other. Some suffixes have not yet been described for Western Garrwa and are known to me only from chance occurrences in publications by the Furbys.

A feature shared by Wanyi and Garrwa is the use of a negative particle and a dative case marker to denote absence of something (privative), as in the following examples (in Wanyi, then Eastern Garrwa and then Western Garrwa; (11) and (12) are both from Furby and Furby (1977b)). This construction is found also in the Arandic languages, to the south of Wakaya, while an equivalent construction is found in Wambaya, although rather than the straight negative particle (*guyala*) it is a nominal derived from this that is used (*guyalinj*' masculine; *guyalinya* feminine) (Nordlinger 1998:101).

(8) *Budangku ngawu wanami-yany.*
Wa nothing 1sg water-DAT
'I've got no water.'

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19 *Mungguji* is a nominal meaning 'owner, 'boss' (e.g. of country)' in Wambaya; see Nordlinger (1998:287). Compare also Kayardild *mungkiji*, an adjective meaning 'own (especially of country or kin)' and 'self'; see Evans (1995:738).

20 For example, Wanyi *ngadanganja* 'his mother'; can be followed by inflections; in Garrwa it seems to be useable for any kin reference, e.g. *nganyi ngadanganja* 'your mother'. The same form is found in Kayardild, where it denotes 'actual' as opposed to 'classificatory' kin (see Evans 1995:194) and Yanyuwa, where it is a free form meaning 'relative, fellow countryman' (see Kirton 1971:33).

21 Glossed 'gether' (Aboriginal English, from 'together') e.g. *bawakula* 'brothergether (a group in which one person is elder brother to the other(s))'. The kin dyad suffixes in Wambaya are *-gulanji* (masculine) and *-gulanga* (feminine); see Nordlinger (1998:104).

22 Furby and Furby (1977b:75 ex. (11)) gloss this as 'animate' and say that it is obligatory with *yuwaji* 'still' when speaking of animate things without using a verb in the clause; however, words like *wankannga* and *yaminnga*, from *wanka* 'alive' and *yami* 'eye', are translated by speakers as 'still alive' and 'still awake' etc. It occurs with the meaning 'still' also in Eastern Garrwa, e.g. *bayakadannga* 'still small'.

23 *-nnga* is the form of the Ablative case in Wambaya; see Nordlinger (1998:90).

24 See Furby and Furby (1977b:86 example (4)), Furby (1972:11), and the 'Garawa' list in Menning and Nash (1981), in which *wurara-wala* should be *wurrarra-wala*, from *wurrarra* 'wind'.

(9) *Budangku mama-(a)nyi.*
EG nothing food-DAT
'I've got no tucker.'

But note example (10) in which *-yanyi* has a genitive function and *mama* is unmarked:

(10) *Budangku mandaki-yanyi maman.*
EG nothing white.man-DAT food
'I've got no white man's tucker.'

(11) *Manimani ngali wij-ba waliji-nyi.*
WG nothing 1du.ex return-R meat-DAT
'We returned without any kangaroos.'

(12) *Mikuyaji mama-nyi walkurra ngawamba bayakada.*
WG nothing food-DAT big only small
'There are no big (watermelons), only small ones.'

Garrwa has an extensive system of suffixation of compass point names which has been described by Furby and Furby (1976). There is a hint or two in the Wanyi corpus of something similar, but at this stage there is far too little information to justify any attempt at comparison.

5.3 Pronouns

Personal pronouns are compared in Table 6.

Table 6: Personal pronouns

	Nominative		Accusative	
	Wanyi	Garrwa	Wanyi	Garrwa
1sg	*ngawu, ngawiji*	*ngayu*	*nga*	*ngana*
2sg	*ninji*	*ninji*	*ninya*	*ninya* (Furby *ninga*)
3sg	*nyulu, nyuliji*	*nyulu*	*na*	–
1du.in	*nungka*	*nungkala* (EG *nungka*)	*niyanya*	*niyanya*
1du.ex	*ngali*	*ngali*	*ngaliyanya*	*ngalinya*
2du	*nimba*	*nimbala* (EG *nimba*)	*nimbalanya*	*nimbalanya*
3du	*bula*	*bula*	*bulanya*	*bulanya*
1pl.in	*ngamba(la)*	*ngambala* (EG *ngamba*)	*ngambalanya*	*ngambalanya*
1pl.ex	*nurri, nurra, nurriji*	*nurru*	*nurranya*	*nurrunya*
2pl	*narri*	*narri*	*narranya*	*narrinya*
3pl	*yalu*	*yalu*	*yalinya*	*yalunya*

	Dative		Reflexive/Reciprocal	
	Wanyi	Garrwa	Wanyi	Garrwa
1sg	*ngaki*	*ngaki*	*ngaka*	*ngaka*
2sg	*nganyi*	*nganyi*	*nganyingka*	*nganyingka*
3sg	*nangangi*	*nangangi*	*nangka*	*nangka*
1du.in	*niyangi*	*niyangi*	*niyangka*	*niyangka*
1du.ex	*ngaliyangi*	*ngalingi*	*ngaliyangka*	*ngalingka*
2du	*nimbalangi*	*nimbalangi*	*nimbalangka*	*nimbalaka*
3du	*bulangi*	*bulangi*	*bulangka*	*bulangka*
1pl.in	*ngambalangi*	*ngambalangi*	?	*ngambalaka*
1pl.ex	*nurriyangi*	*nurrungi*	?	*nurrungka*
2pl	*narriyangi*	*narringi*	?	*narringka*
3pl	*yalungi*	*yalungi*	*yalungka*	*yalungka*

	Locative		Allative	
	Wanyi	Garrwa	Wanyi	Garrwa
	Dat + *nbunu*	Dat + *ndu*	?	Loc + *rri*

	Ablative		Translocative	
	Wanyi	Garrwa	Wanyi	Garrwa
	Dat + *nbunaak*	Loc + *nanyi* (Eastern Garrwa has ablative suffix *-nbunanja*)	Dat + *nbiyangka*	Loc + *yangka*

Garrwa has an incomplete set of compound object–subject pronouns, which are used (apparently obligatorily when the appropriate compound exists) when pronouns are used for both the subject and the object in the same clause (Furby 1972:3–5). Furby gives four forms with 1sg object — subjects are the three second person forms and 3pl. There are three with 1du.ex object, subjects being the three third person forms. All other pronouns except 3sg occur as objects with 3du and 3pl subjects. This amounts to a total of 23 of the 75 possible forms. For all other combinations the appropriate two free pronouns are used. The forms are analysable as follows: 1sg object is *nga-*; other objects are the free object form plus *-n* when the subject is dual and the object is non-singular, and are identical to the free subject form when the subject is plural. Second person and 3du subjects are as in the free form. 3pl subject is *-njalu*. 2sg object is *ninya-* (as in the free form, and with no added *-n*) when the subject is dual and *ni-* when the subject is plural. The only form with 3sg subject is *ngalinyili* (from *ngalinya nyulu*). Reductions from the combined free forms (for which see Table 6) are near-haplologies to eliminate one of two similar syllables; other changes are *n*-insertion and hardening of the initial glide of *yalu*. Other examples (with the two free forms shown in brackets) are:

- 1sg obj-2du subj *nganimbala* (< *ngana nimbala*)
- 1du.in obj-3du subj *niyanyanbula* (< *niyanya bula*)
- 2du obj-3pl subj *nimbalanjalu* (< *nimbalanya yalu*)
- 2sg obj-3pl subj *ninyalu* (< *ninya yalu*)

My limited Eastern Garrwa corpus has two combined forms: 1sg obj-2sg subj *nganinji* (as in the Western dialect) and 1sg obj-3pl subj *ngananjalu* (compared to Western *nganjalu*).

An unusual feature of the pronouns which these languages share with some neighbouring languages is the existence of a full set of reflexive/reciprocal pronouns (or more correctly for some of the other languages, bound pronominal prefixes followed by a reflexive/reciprocal marker) which are only and necessary markers of reflexivity or reciprocity in sentences. Unlike most Australian languages, these languages do not have any method of marking a verb as reflexive or reciprocal. The morpheme marking this function in West Barkly languages is essentially the same in form as the Garrwa/Wanyi pronominal suffix; the fact that tense marking can follow this suffix is a further point of resemblance between Garrwa (but not Wanyi) and the languages to its west. Another point of resemblance (involving also Wanyi) is that the use of this reflexive/reciprocal marking on pronouns (which are bound forms in the West Barkly languages) causes the verb to be intransitivised; a noun subject is not marked for ergative.[25] In the southern Ngarna languages the reflexive/reciprocal suffix is *-b(a)* and in Kaytetye *-wenhe* while in Warumungu most forms end in *-urnu*.[26] In these languages, and some others further west, the verb remains transitive and a noun subject is marked ergative. Examples of Western Garrwa usage of these pronouns are found in Furby (1972:3) and Furby and Furby (1977b:62). These show that certain concepts which one would not have expected to involve reflexivity — being hungry in one example, eating in another — require these pronouns. (1) above is a Wanyi sentence in which the general term translated as 'men' is cross-referenced by a singular pronoun, which could be regarded as either reflexive or reciprocal. (3) is an Eastern Garrwa reciprocal example, and the following Wanyi example shows a reflexive clause as a complement of another verb, with allative marking.

(13) *Naj-ba ninji nga wakada-kurru ngaka-wurru.*
Wa see-R 2sg 1sg.ACC wash-ALLA 1sg.REFL-ALLA
'Did you see me washing myself?'

5.4 Demonstratives and interrogatives

Demonstrative forms in the two languages are compared in Table 7. Missing forms in Wanyi and Eastern Garrwa are due to the incompleteness of the data.

Table 7: Demonstrative pronouns

'this'	Wanyi	Eastern Garrwa	Western Garrwa
Nom	*nayi, nawu*	*nayi*	*nayinda*
Erg			*nangini, nanangini*
Dat	*nangkanyi*		*nayingkanyi, nangingkanyi*
Loc	*nawunu, nawini*	*nanyina*	*nanginyina*
Alla	*nangkurru*		*nayingkurri, nangingkurri*
Abl			*nanginbunanyi*
Dual			*nanginkuya, nanginkujarra*
Pl			*nanginmuku*

25 There is some doubt about this for Jingulu; there is some evidence in Pensalfini (1997) that a noun subject is marked ergative, and some that it is not. Rob Pensalfini (pers. comm.) currently thinks that ergative is not used, but that there could be some inter-speaker variation.

26 Kaytetye data from Myf Turpin (pers. comm.) and Warumungu from Evans (1982).

'that'	Wanyi	Eastern Garrwa	Western Garrwa
Nom	*nana* [27]	*nana, nanda*	*nanda*
Op	*nanangkani*	*nanangi*	*nanangi*
Dat	*nanangkany*	*nana(a)ngkanyi*	*nanangkanyi* (*nanankanyi* ? see (24))
Loc		*nanangina*	*nananyina*
Alla	*nanangkurru*	*nanangkurri*	*nanangkurri*
Abl			*nanamunanyi*
Dual	*nanangkuya*	*nanangkuya*	*nanankuya, nanankujarra*
Pl	*nanawanyi*	*nanamuku*	*nananmuku*

Wanyi has three interrogative roots *(w)injika* 'who', *wanyi* 'what' and *winja* (with a couple of odd inflected forms lacking the initial consonant) 'where'. Eastern Garrwa has only two, *wanyi* being used for both 'who' and 'what' and *wanja* for 'where'. Western Garrwa has the same two roots, but they are used more or less interchangeably for all inflectable interrogatives. Interrogative forms are compared in Table 8.

Note also Wanyi *winjakurruna* 'how' as in *winjakurruna kanawa* 'how tall?', and *wunjukunyi* 'how big?'.

Western Garrwa has a suffix *-wa*, termed 'continuative aspect', added only to singular demonstratives in the allative case; see Furby (1972:17–18). This is not the same as the directional suffix *-wa* occurring on demonstratives in the nominative case. The latter suffix is one of several occurring only on demonstratives and the interrogative and described and illustrated in Furby (1972:23–28). No counterparts are known in Wanyi.

Table 8: Interrogative pronouns

	Wanyi			*Eastern Garrwa*		*Western Garrwa*
	who	what	where	who, what	where	who, what, where
Nom	*winjika, injika*	*wanyi*	*winja*[28]	*wanyi*	*wanja*	*wanyi, wanjani*
Op/ Erg	*winjikani*	*wanyini*		*wanyini*		*wanyingi, wanjangini*
Dat	*(w)injikanyi, winjikaaninyi*	*wanyingkanyi*		*wanyingkanyi*		*wanyingkanyi, wanjakanyi*
Loc			*winjana* 'which'		*injani, injawa, wanjawa*	*wanyina, wanjabina*
Alla			*wunjuku*			*wanyingkurri, wanjabiyurri*
Abl			*winjibunyi, injabanyi*		*wanjabunanja, wanjabananyi*	*wanjabinanyi*
Dual						*wanyinkuya, wanjankuya, wanyinkujarra, wanjankujarra*
Pl					*wanyimuku*	*wanyinmuku, wanjanmuku*

27 *Nana* is the feminine, singular, nominative (Class II) form of 'this' in Wambaya (Nordlinger 1998:108).

28 *Inja* means 'which' in Wambaya; *injani* means 'where' (= *inja* 'which' + *-ni* ERG/LOC); *wunjugu* means 'how'. See Nordlinger (1998:123, 124). Note also *winthi* 'where' in Wakaya and Yinjilanji, *wadha* 'where' in Bularnu.

6 Verbs

Wanyi verbs exist in the following inflected forms:

- Realis
- Irrealis
- Imperative
- Infinitive
- Same-subject subordinate
- Different-subject subordinate

Garrwa verbs have four inflected forms:

- Unmarked
- Infinitive
- Same-subject subordinate
- Different-subject subordinate

It will be noted that no reference is made in either of these lists to tense (or to some other categories that might have been expected, such as habitual aspect). Wanyi has no obligatory marking of such categories; Garrwa marks them obligatorily, but not necessarily on the verb, and such markers as are used are perhaps best regarded as clitics rather than inflectional suffixes. This will be described in §7.

I have tentatively divided Wanyi verbs into three conjugations; a number of verbs, however, do not fit into any of the three. I am calling them the V, J and M conjugations. Examples of three verbs from each, and some irregular verbs, are given in Table 9. A few forms that have not actually been heard are given (marked with an asterisk), on the basis of comparable forms. Some others are omitted, not being predictable with confidence. There are many inconsistencies and exceptions within the conjugations, and the table includes some without comment. Garrwa verbs are generally similar; no classification of them into conjugations has been available until now, but see Belfrage's paper in this volume.

Table 9: Wanyi verb conjugations

	Stem	Imperative	Realis	Irrealis	Same-subject subordinate	Diff.-subject subordinate
V Conjugation		***0~V***	***-bV***	***-kany***	***-jin***	***-kurru***
cover	*makarra*	*makarra*	*makarraba*	*makarrakany*	**makarrajin*	**makarrakurru*
see	*naj-*	*naja*	*najba*	*najkany*	*najin*	
eat	*jarr-*	*jarra*	*jarrba*	*jarrkany*	*jajiny*	
J Conjugation		**lenite *j***	***-bV***	***-kany***	***-in***	***-kurru***
sleep	*kudij-*	*kudiy*	*kudijbi*	*kudijkany(i)*	*kudijin*	**kudijkurru*
bite	*bij-*	*biya*	*bijba*	*bijkany*	**bijin*	*bijkurru*
hit	*daj-*		*daba*	*dajkany*	*dajin*	*dajkurru*
M Conjugation		***-mV***	***0***	***-yany***	***-na***	***-wurru***
sit	*jungku*	*jungkumu*	*jungku*	*jungkarany*	**jungkuna*	*jungkuurru*
stand	*karrinja*	*karrinjamu*	*karrinja*	*karrinjiyany*	*karrinjana*	*karrinjawurru*
cry	*ngindi*	*ngindimi*	*ngindi*	*ngindiyany*		*ngindiwurru*

Irregular						
go, walk	*jila*	*jilanyi*	*jila, jilaba*	*jilakany(i)*	*jilajin*	*jilakurru, jilajurru*
speak	*yany-*	*yanja*	*yanyba*	*yanykany*	*yanjin*	*yanykurru*
drink	*ngara-*	*ngaraji*	*ngaraba*			
jump	*bulubarr-*	*bulubaja*	*bulubarrba*	*bulubarrkanyi*		**bulubakurru*
give	*windi*	*windingi*	*windi, windijbi*	*windijkany*		

6.1 Realis

The realis form in Wanyi uses the verb stem or a suffix *-bV* (in which *V* is normally the same as the last vowel of the stem, but the Appendix shows a number of exceptions). It is used for positive indicative verbs in all tenses, and for intentions that are reasonably sure of being realised. Tense is not obligatorily marked, but might be deducible from context or from time words or other devices. Examples include: (14) and (20), in which there is no cue to time reference (present tense and normalis respectively) other than context (which in these cases is the English sentence used in elicitation); (15), (17) and (19), in which an adverb gives the indication of tense (immediate past, distant past and present respectively); (18), in which an inflected noun shows that the tense is past imperfect; and (21), in which an adverb and a modal suffix show that the reference is to the future. (16) has three realis verbs, two with past reference and one potential (with an appropriate modal suffix on its agent phrase).

(14) *Jijaj-ba nana kudij-bi.*
Wa pretend-R that sleep-R
'He's pretending to be asleep.'

(15) *Yiningki nyulu kannga.*
Wa just.now 3sg return:R
'He's just got home.'

(16) *Ngaki-nbiyangka wikij-bi, ngala ngawu-barri durraj-bi ngamuyu*
Wa 1sg:DAT-TRANSLOC crawl-R then 1sg-then fear-R supposed
nana-ngkani-kiya ngan bij-ba.
that-OP-MAYBE 1sg:ACC bite-R
'It crawled near me and I was afraid it was going to bite me.'

(17) *Kudaa nyulu kalij-bi bidirrikan waliji —*
Wa long.time 3sg spear-R kangaroo meat
'He used to spear kangaroos —'

(18) *Daba bula-ngka kadi-wunybuku.*
Wa hit:R 3du-RECIP small-SINCE
'They've been fighting since they were kids.'

(19) *Yangku ngawuku nanan kudij-bi.*
Wa always 1sg-? there sleep-R
'I always camp there.'

(20) *Kara-na nana nyulu jungku.*
Wa hill-LOC that 3sg sit:R
'It belongs in the hills.'

(21) *Kamu ngawu-kiya naj-ba.*
Wa tonight 1sg-MAYBE see-R
'I'll have to look tonight.'

When *-barri* 'now, then' is added to a verb ending in *ba*, there is deletion of one of the *ba* syllables.

(22) *Jila-ba-warri nyulu, burrbij-ba-rri nyulu.*
Wa walk-R-first 3sg run-R-now 3sg
'He was walking; now he's running.'

The cognate morpheme in Garrwa, without further marking, covers a similar range of functions (but only when tense or aspect is marked on some other constituent of the sentence). However, it is used also in a negative sentence and in the imperative, which are not appropriately covered by the label 'realis', and so it is called 'unmarked'. Garrwa sentences involving this verb form will be given in §7.

Two forms built on the realis are found in Furby and Furby (1977b). One of these, *-nawa*, occurs in only one example, without explanation. The example is reproduced here.

(23) *— Ngala yalu kujba-nawa nangangi mandi.*
WG while 3pl search-NEG 3sg:DAT Monday
'— while they do not search for him on Monday.'

The other is glossed adjectiviser; see Furby and Furby (1977b:94–95). The Furbys give the following examples, among several others.

(24) *Kuj-ba nangk-i nana-nkanyi badada-nyi yikijba-warr.*
WG search-UNM 3sg:REFL-PAST that-DAT baby-DAT be.lost-ADJR
'She searched for that baby, lost in the bush.'

(25) *Wijkunumba-yi banda-rri ngarrkadaba-warra-nyi kananganja-nyi.*
WG bring.back-PAST camp-ALLA spear-ADJR-ERG emu-DAT
'(The man who is adept at) spearing emus brought it back to camp.'

6.2 Imperative

The imperative form of the verb in Wanyi is used for commands (26) (including prohibitions (27)), suggestions (30) and (sometimes with *-wa* affixed to the subject) permission (28), (29). Examples are:

(26) *Niya jamba-na.*
Wa put.down:IMP ground-LOC
'Put him down on the ground.'

(27) *Balyanga nana laluu-mu.*
Wa don't that wake-IMP
'Don't wake him.'

(28) *Kudiy nyulu-wa.*
Wa sleep:IMP 3sg-CONT
'Let him sleep.' (See §7.3 for *-wa*)

(29) *Ngaba-ma ninji.*
Wa take-IMP 2sg
'You can take it.'

(30) *Jariya ngamba wurrarra-mukunu.*
Wa enter:IMP 1pl.in wind-ESCAPE
'We'll go inside out of the wind.' (= 7)

The imperative form with *-ya* affixed functions as a potential, denoting a possible occurrence, to be avoided.

(31) *Kulukulij-a, yirrbink-a-ya ninji.*
Wa get.down-IMP fall-IMP-POT 2sg
'Come down, you might fall.'

(32) *Naj-a-ya nga yalu.*
Wa see-IMP-POT 1sg:ACC 3pl
'I don't want anyone to see me.'

Neither imperative nor potential is marked by a verbal inflection in Western Garrwa; see §7 for examples of both. Eastern Garrwa imperative could be treated as a suffix added to the realis, since the morpheme involved seems to be attached only to verbs, but since it is closely related to the Western Garrwa form they are discussed together.

6.3 Irrealis

Irrealis in Wanyi is used when an indicative sentence is negated, as in (33). It may also be used to denote intention as in (34) and, with negative, (35), purpose (36), permission (37) (and compare imperative for this purpose in (29)), prohibition (negation of permission) (38), ability (at least with negation, (39)). It negates the verb of a subordinate clause. It covers the same range of tense and aspect as realis.

(33) *Budangku ngawiji nan burrurri naj-kany wabula.*
Wa not 1sg 3sg:ACC man see-IRR before
'I've never seen that man before.'

(34) *Kudij-kany-barri ngawu.*
Wa sleep-IRR-now 1sg
'I'll have a sleep.'

(35) *Budangku nyulu ngaki yany-kany.*
Wa not 3sg 1sg:DAT talk-IRR
'He won't talk to me.'

(36) *Kunda-nyi ngawu kuj-ba kurri-kany ngaka mundirri.*
Wa stick-DAT 1sg look.for-R scratch-IRR 1sg:REFL back
'I'm looking for a stick to scratch my back.'

(37) *Nyulu yama laluu-jkany.*
Wa 3sg self wake-IRR
'Let him wake up himself.'

(38) *Budangku nana kirriya naj-kany yarrambaja.*
Wa not that woman see-IRR men's.corroboree
'Women aren't allowed to watch that corroboree.'

(39) *Budangku ngawu ninya laji-kany.*
Wa not 1sg 2sg:ACC hear-IRR
'I couldn't hear you.'

(40) *Jila nyulu yany-kany.*
Wa go:R 3sg talk-IRR
'He went away without saying anything.'

There is no corresponding category in Western Garrwa. There are, however, three examples in the Eastern Garrwa corpus of a form with at least the allomorphs *-kanbala* and *-yany*, which seems to correspond to the Wanyi irrealis.

(41) *Daba nyul-I nana-ngi naj-kanbala.*
EG hit:UNM 3sg-PAST that-ERG see-IRR
"You never see that man hit you."[29]

(42) *Nana nyulu — nganinyi; junu naj-kanbala.*
EG that 3sg man I.don't.know see-IRR
"That man we never seen before."

(43) *Muduj-ba nyulu, miku nyul-i-ya manku-yany,*
EG be.mad-UNM 3sg not 3sg-PAST-DES.PAST hear-IRR
miku nyul-i-ya naj-ba.
not 3sg-PAST-DES.PAST see-UNM
"He couldn't see and he couldn't hear anything — he was half silly."

6.4 Infinitive

The form here called 'infinitive' in Wanyi is not common in the corpus and not well understood. The form seems to be *-i* with *j*-final stems and *-ji* with other stems.[30] It usually occurs with a form of the concomitant suffix attached and denotes purpose, as in *kaliijudu* 'for throwing a spear with' (of a woomera) (*kaliiji* + *-udu* 'concom').

(44) *Wakada-ji ngaka wanami-wurru jila-kany*
Wa wash-INF 1sg:REFL water-ALLA go-IRR

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29 Double inverted commas indicate a translation given by the informant. Other glosses are either the sentence as elicited or the linguist's translation.

30 This is identical in form to what Nordlinger has analysed in Wambaya as an epenthetic vowel (*-i-*) and a thematic consonant + epenthetic vowel (*-ji-*). These occur between the verb stem and non-finite suffixes. The latter occurs with vowel-final stems and the former with consonant-final stems. See Nordlinger (1998, Ch. 6.)

ngawiji kilimi-ji wanami.
1sg get-INF water
'I'm going for water to wash myself.'

(45) *Budangku wanami-yanyi wakada-j-udu ngaka-adu.*
Wa not water-DAT wash-INF-CONCOM 1sg:REFL-CONCOM
'I've got no water to wash myself.'

In Garrwa also the infinitive is used to mark purpose. Furby and Furby (1977b:85–86) give examples; the following are from my Eastern Garrwa corpus.

(46) *Wudumba narri ngaki wabuda, ngara-jkanyi ngayu.*
EG get:UNM 3pl-PAST 1sg:DAT water drink-INF 1sg
"You fella get me water, for drink."

(47) *Ngarrkadaba ngay-a kuda, wabula, barrki-j-ba-barri*
EG spear:UNM 1sg-PRES(?) many before bad-INCHO-UNM-now

ngay-a, ngarrkada-jkanyi.
1sg-PRES spear-INF
'I used to spear (kangaroos) but I'm too old now.'

(Note, this seems to indicate that *(-)barri* has the same function in Eastern Garrwa as in Wanyi; in Western Garrwa *(-)barri* seems to be a hesitation marker, and is glossed 'um'; see (4).

(48) *Daba nana ngay-i wadaban, yundi-jkanyi ngamba.*
EG hit:UMN that 1sg-PAST goanna cook-INF 1pl.in
'I killed a goanna; we've got to cook it.'

6.5 Same-subject subordinate

The term 'same-subject subordinate' seems to be appropriate for Garrwa, but there are doubts about its appropriateness in Wanyi; however, the morphemes concerned seem to be genetically related. In Wanyi it is attested in subordinate clauses to mark various types of action temporally or causally connected to the action of the main clause. Usually the subject of the two actions is the same and one is tempted to doubt the correctness of the exceptions. The suffix has a variety of forms and may in fact be two morphemes, one with final *n(a)*, related to locative on nouns[31] and one, with final *ny(i)*, related to ablative. Some 'same-subject' examples are:

(49) *Daba ngawu jumbuuna, kurrumba-na jila-jin.*
Wa hit:R 1sg goanna track-LOC go-SS
'I killed a goanna while I was going along the track.'

(50) *Jungku nana nyulu warrunu laji-kin kundanaj-in.*
Wa sit:R there 3sg outside hear-SS observe-SS
'He's outside, listening.'

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[31] The form of the same-subject concurrent non-finite inflection in Wambaya is *(-j)-i-ni* '(thematic consonant)-epenthetic vowel-ERG/LOC'; Nordlinger (pers. comm.) and see Nordlinger (1998:212).

(51) *Wakadaba ngaka mani, waliji-wunyi karrba-jinyi.*
Wa wash-R 1sg:REFL hand meat-ABL cut-SS
'I washed my hands after I skinned the bullock.'

(52) *Ngurralyi-ya ninji nanawu-nu bilyikija-na.*
Wa drown:IMP-POT 2sg there-LOC swim-SS
'You might drown if you swim there.'

(53) *Bijali-warri yalu-wa jungku-mu jurra-na-barri.*
Wa by.and.by-first 3pl-LET sit-IMP play-SS-now
'Let them play a bit longer.'

Examples which do not seem to fit the 'same-subject' model are:

(54) *Jarr-ba ngawu nana, budangku-uj-in.*
Wa eat-R 1sg that nothing-INCHO-SS
'I had to eat it; there was nothing else.'

(55) *Naj-ba ngawu jambiji nana wikij-iny.*
Wa see-R 1sg track that crawl-SS
'I saw a track of (a snake) crawling.'

(56) *Nanganji-m nan jiban, dara-nyin kudij-in.*
Wa get-IMP 3sg:ACC blanket dog-GEN lie-SS
'Get the blanket the dog was lying on.'

In Garrwa the corresponding suffix is used for same-subject subordinate verbs, although there is one anomalous example in the Eastern Garrwa corpus. Furby and Furby (1977b:88, 90, 92) give a number of examples. The following examples are taken from the Eastern Garrwa corpus (including the anomalous one, 60).

(57) *Jilaj-ba ngay-a, marrka-jini.*
EG go-UNM 1sg-PRES hunt-SS
'I'm going away, hunting.'

(58) *Warraku-j-bi yal-a, ngara-jini.*
EG mad-INCHO-UNM 3pl-PRES drink-SS
'They've been drinking and they're mad.'

(59) *Bajangu-wanyi bijba-yi, balikayaj-ina.*
EG dog-ERG bite-PAST hungry-SS
'The dog bit him because it was hungry.'

(60) *Daba nana nyulu wanduj-ina nana bajangu.*
EG hit:UNM that 3sg bark-SS that dog
'He hit that dog because it was barking.'

It is noted that Garrwa permits unmarked nouns in the subordinate clause while Wanyi does not. Compare Wanyi examples (51) and (56) above with the following from Furby and Furby (1977b).

(61) *Kujarra malumba jilaj-ba bula yarrij-ina jangkurr naja-na.*
WG two together go-R 3du put-SS word paper-LOC
'They sit [sic] together, putting words on paper.'

6.6 Different-subject subordinate

The different-subject subordinate marker is related to the allative suffix on nouns, and it is usually used to mark a subordinate verb whose subject is the object of the main clause. Wanyi examples include:

(62) *Mama-wurru naj-ba nga dabarra-kurru.*
Wa food-ALLA see-R 1sg:ACC cook-DS
'He watched me cook the damper.'

(63) *Daba ngawu nan dara wandura-kurru.*
Wa hit:R 1sg 3sg:ACC dog bark-DS
'I hit the dog because it was barking.'

(64) *Balyanga nga kayin-ma dabarra-kurru.*
Wa don't 1sg:ACC call-IMP cook-DS
'Don't call me away from my cooking.'

(65) *Mularrij-ba ngawij nana bulumirri, ngindi-wurru.*
Wa pick.up-R 1sg that baby cry-DS
'I picked up the baby that was crying.'

A problematic example is

(66) *Wayi ninya yalu nguru-bu, da-jkurru yalu-ngka.*
Wa question 2sg:ACC 3pl tell-R hit-DS 3pl-RECIP
'Did they tell you about the fight?' (Presumably the two 3pl's are different.)

Eastern Garrwa examples include:

(67) *Ngala manku ngay-i bajangu-muku wandura-jkurri.*
EG then hear:UNM 1sg-PAST dog-PL bark-DS
'I heard all the dogs barking.'

(68) *Bajalij-ba ngay-a waliji yaj-kurri.*
EG smell-UNM 1sg-PRES meat burn-DS
'I can smell meat cooking.'

Furby and Furby (1977b:88–92) give a number of examples. Here again it is noted that Garrwa permits nominative nouns in the subordinate clause (67), (68) while in comparable sentences in Wanyi (62) they must be inflected (this time with the allative).

7 Tense, mood and aspect marking in Garrwa

Garrwa has a system of markers which, for want of a better name, will be referred to as clitics, affixed to verbs or pronouns or, in some cases, other words and marking tense, imperative mood, habitual aspect or continuative aspect. In some cases the form attached to non-verbs is reduced, but there is always some phonological similarity.

7.1 Tense

Tense markers are attachable only to verbs and pronouns (in subject, object, compound object-subject and reflexive forms). Attachment to pronouns is preferred.[32] The system is as given in Table 10 (remember that with a vowel-initial suffix the initial vowel replaces the final vowel of the stem):

Table 10: Tense markers in Garrwa

	Verbs	Pronouns
Past	*-yi*	*-i*
Present	*-ngka ~ -ka*	*-Ø ~ -a*
Future	*-ja*	*-ja ~ ja-*

The short form of the present tense marker used with verbs results from dissimilation and is used when the stem-final vowel is preceded by a nasal–stop cluster (cf. McConvell 1988); thus, for example, *najbangka* 'see-PRES', *wilkungka* 'run-PRES', *bunudujbangka* 'get close-PRES' but *jungkuka* 'sit-PRES', *lalanbaka* 'watch-PRES', *yukumbaka* 'wait-PRES'. With pronouns there is usually no overt marker for present tense, but with 1sg and 3pl subject forms there is an optional suffix *-a* (so *ngaya* and *yala* instead of the root forms *ngayu* and *yalu*). Compare (74) and (75). The future marker *ja* may be either suffixed to a pronoun: subject as in (79), object (80) or complex (81), or prefixed to a pronoun: subject (82), object (83) or complex (84), as well as being able to be suffixed to a verb (78). When it follows the 3sg or 1pl.ex nominative pronouns the final vowel of the stem changes to *i* (or alternatively we may say that there is an allomorph *-ija*); so *nyulija* and *nurrija* from *nyulu* and *nurru* respectively.

The 1sg future form *jangayu* may be shortened to *janga*; only the shortened form is attested for Eastern Garrwa. No examples of future tense marking on verbs are attested for the Eastern dialect, and suffixation of *-ja* on pronouns seems to be rare; the only example in the corpus is *ngambaj* (<*ngambaja*) '1pl:in-FUT'.

Furby (1972) and Furby and Furby (1977b) give many examples of these tense markers and most of the following examples are taken from the Eastern Garrwa corpus. However, due to the absence of future *-ja* from the latter, a few examples (78)–(81), (83) are taken from the Furbys' papers.

Past tense:

(69) *Nana-muku-nja ngay-i yany-ba yalu-ngi.*
EG that-PL-DAT 1sg-PAST talk-UNM 3pl-DAT
'I was talking to that lot.'

(70) *Jila ngay-i waluwa,*
EG go:UNM 1sg-PAST before

ngala nyul-i jila nana banyarri.
then 3sg-PAST go:UNM that behind
"That bloke came after me; I was gone."

32 And in this it resembles the West Barkly languages; see, for example, Nordlinger (1998, Ch. 5).

(71) *Miku ngay-i daba, nana-ngi yingka-wanyi daba-yi.*
EG not 1sg-PAST hit:UNM that-ERG other-ERG hit-PAST
'I didn't hit him, someone else did.'

The following two examples show (at least for the particular dialect involved in each) that past tense marking is not obligatory if there is another time indicator, and that no further marking is required on realis forms when there is a modal adverb:

(72) *Kanjibul-wanyi ngana kijij-ba wabula.*
WG policeman-ERG 1sg:ACC tie-UNM long.ago
'A policeman tied me up a long time ago.'

(73) *Baki ninji raj-ba.*
EG maybe 2sg burn-UNM
'You might get burnt.'

Present tense:

(74) *Marrala ngayu nangangi.*
EG fear:UNM 1sg 3sg:DAT
'I'm frightened of that fellow.'

(75) *Warinjij-ba ngay-a.*
EG thirsty-UNM 1sg-PRES
'I'm thirsty.'

(76) *Ngaki bajangu kunyban; bijba-ngka kuda jikawarran.*
EG 1sg:DAT dog good bite-PRES many wallaby
'My dog's a good one; he kills a lot of kangaroos.'

(77) *Bajangun ngaki wanduba-ngka, wandu-ba nyulu yaji-na.*
EG dog 1sg:DAT bark-PRES bark-R 3sg camp-LOC
"Must be my dog barking in the camp."

Future tense:

(78) *Wudumba-ja yalu waliji dungala-na.*
WG get-FUT 3pl meat stone-LOC
'They will get beef with money.'

(79) *Duku-na nungkala-ja yukumba.*
WG dry-LOC 1du.in-FUT wait:UNM
'We will wait at the dry place.'

(80) *Wanyi-na ninga-ja naj-ba.*
WG interrogative-LOC 2sg:ACC-FUT see-UNM
'When will he see you?'

(81) *Manku nga-ninji-ja.*
WG hear:UNM 1sg:ACC-2sg-FUT
'You will hear me.'

(82) *Ja-bula kuluka jungku.*
EG FUT-3du sleep:UNM sit:UNM
'They'll be camping together.'

(83) *Manku ja-niyanya bada-jkurri.*
WG hear:UNM FUT-1du.ex:ACC come-DS
'He will hear the two of us coming.'

(84) *Ja-nga-ninji milidimba, nanda jala ninji ngarrkadaba.*
EG FUT-1sg:ACC-2sg show:UNM that then 2sg spear:UNM
"You'll have to take me and show me where you speared that bloke."

7.2 Imperative mood

Imperative mood in Western Garrwa is marked by the clitic *-kiyi*, attached to a variety of word classes, but, of personal pronouns, only to the second person singular nominative (85). In 26 of the 28 examples in Furby and Furby (1977b:81–84) the clitic is attached to the first word of the clause; this may be a subject as in (85), object (86) or peripheral constituent (87), (88). With non-singular second person pronouns imperative is indicated by reduplication of the pronoun, with, in the dual, the final vowel changing to *i* (89). With other nominative pronouns, except 1du.ex, for which no form has been found, and all reflexive pronouns, the imperative (or optative, as it could be called with first and third person pronouns) is marked by the clitic *-nyi* (90). In the Eastern Garrwa corpus the marker has two forms, *-i* and *-kiyi*, and it is found only on the realis form of verbs (91), (92). Eastern Garrwa also has non-singular imperative forms in which the 2du or 2pl pronoun, as appropriate, is suffixed to the realis verb: thus *jungkunimba* 'you two stay!' and *jungkunarri* 'you mob stay!'.

The first six of the following examples are taken from Furby and Furby (1977b:81–84) and many others will be found there. The remainder are Eastern Garrwa.

(85) *Ninji-kiyi balba yingka-rri yaji-yurri.*
WG 2sg-IMP return:UNM other-ALLA camp-ALLA
'You go away to another place!'

(86) *Dungala-kiyi wudumba.*
WG stone-IMP get:UNM
'Get a stone!'

(87) *Miku-kiyi yabimba.*
WG not-IMP make:UNM
'Don't make it!'

(88) *Kada-kiyi jungku.*
WG quiet-IMP sit:UNM
'Be quiet!'

(89) *Nimbala-nimbal-i jungku kada.*
WG 2du-2du-IMP sit:UNM quietly
'You two sit quietly!'

(90) *Nyulu-nyi jilaj-ba nanka-warri.*
WG 3sg-IMP go-UNM lagoon-ALLA
'Let him go to the lagoon.'

(91) *Kudarri jarrb-i nana kudarri.*
EG don't eat-IMP that don't
'Don't eat that!'

(92) *Jilajba-kiyi, yilikajba-kiyi nanama-nbarri nganinyi ja-nyulu jila.*
EG go-IMP ask-IMP that-NOW man FUT-3sg go:UNM
'Go and ask that man if he's going to go.'

7.3 Habitual and continuative aspects

Habitual aspect in Western Garrwa is marked by a clitic *-kili ~ nkili* on verbs, with a reduced form *-ili* on pronouns and other words. It is usually, but not always, translated as past habitual, 'used to'. Examples are taken from Furby (1972) and Furby and Furby (1977b). There is no evidence of this morpheme in the Eastern Garrwa corpus. Examples are:

(93) *— ngala ngayu jungku-kili Mukularrangu ngaki-nyina yaji-na.*
WG while 1sg sit-HAB Robinson.R 1sg:DAT-LOC country-LOC
'— while I used to live at Robinson River.'

(94) *Jal-ili karu nanda Milingundaya wankala wabula.*
WG then-HAB call:UNM that Milingundaya olden.times before
'Then, in olden times, we used to call that one (high tide) Milingundaya.'

(95) *Walya-nyi-kili wij-ba langina kamu.*
WG dugong-DAT-HAB return-UNM north:ABL later
'They come back from the north for the dugong later today.'

(96) *Yany-ba ngali-ngk-ili Garrwa jangkurr.*
WG talk-UNM 1du.ex-RECIP-HAB Garrwa word
'We two always talk Garrwa.'

A clitic *-wa* on (at least) verbs in unmarked form, personal pronouns and time words denotes a continuing action, translated 'still'. It is not attested in my Eastern Garrwa corpus, and all examples here come from Furby and Furby (1977b) or Furby (1972). However, a clitic *-wa* occurs three times in my Wanyi corpus and is probably the same (although it was originally glossed 'let' and is attested only in optative sentences). Example (28) illustrates it.

(97) *— ngala kudiya jarrijba-wa yalu.*
WG while some be.away-CONT 3pl
'— while they, some of them are still away.'

(98) *Yuwaji-wa nanda ngulya wilku-ngka wulani-nyi.*
WG still-CONT that blood run-PRES yesterday-DAT
'That blood is still running from yesterday.'

(99) *Yalu-wa jungku banda-na.*
WG 3pl-CONT sit:UNM camp-LOC
'They are still sitting at the camp.'

7.4 Other aspectual forms

The Furbys describe a number of other aspectual suffixes, but without always linking the different allomorphs which occur on pronouns[33] and other words. For example, Furby (1972:6–8) describes a suffix *-yi*, called abilitative aspect and carrying the meaning 'might' or, with a negative, 'cannot'. (It is written *-ya* in Furby and Furby (1977b:98) ex. 17.) It appears that this is an allomorph used only on pronouns, since the same name and function are attributed to a suffix *-wali* (attested on a noun and on *miku* 'not') in Furby and Furby (1977b:51, with examples on pp.54 (ex. 2), 56 (ex. 17) and 60 (ex. 11)). To compound the confusion, Furby and Furby (1977a) have a suffix called dubitive A mood, which seems to have the same function as the abilitative in a positive sentence and has the same form *-yi* for pronouns (including the relative pronoun/conjunction *jala*), but has an allomorph *-wanyi* on verbs.

Other aspects described or mentioned by the Furbys are:

- desiderative past, *-yanyi ~ kiyanyi ~ ya ~ yala*, meaning 'wanted' or, with the negative, 'did not';
- desiderative nonpast, *-mi ~ -kimi* meaning 'wants' or, with the negative, 'does not';
- limitative, *-ma*, meaning 'only' (but note that *-wanyi* is glossed lim for limitative in Furby and Furby (1977b:56) ex. 19);
- primordial, *-warri*, meaning 'first';
- inceptive, *-ngiwa*.

See Furby (1972:6–9), Furby and Furby (1977a:16–20) and Furby and Furby (1977b:51 and, for a list of forms, p.53).

Another suffix, labelled 'intensifier', may also belong with the above. The forms are *-mirra* and *-nmirra*, the latter used on possessive pronouns; see Furby (1972:15) and Furby and Furby (1977b:35 ex. 6, p.82 ex. 7).[34] A similar morpheme (at least as regards function with pronouns) is *-mayngka*, attested only on pronouns (Furby 1972:15); thus *ngakinmirra* and *ngakumayngka* both mean 'my own'.

Most of these morphemes are attested in Wanyi. The desiderative past corresponds to the Wanyi irrealis, described in §6.3. Sentence (43) above seems to illustrate this morpheme in Eastern Garrwa. Examples given by Furby and Furby include:

(100) *Ngayu-kiyanyi marrkaj-ba wadaba.*
WG 1sg-DES.PAST hunt-UNM goanna
'I wanted to hunt goanna.'

(101) *Yalu-njal-iyanyi waj-ba wajili-nyi.*
WG 3pl:acc-3pl-DES.PAST give-UNM honey-DAT
'They wanted to give them honey.'

(102) *Miku nurri-yala naj-ba kamba.*
WG not 1pl.ex-DES.PAST see-UNM sun
'We didn't see the sun'

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33 Again, as for tense suffixes (see §7.1), only on those pronominal forms which can function as subjects or objects.

34 This is a likely loan from a Tangkic language word *mirra* 'good'; see Evans (1995:195).

The morpheme, *-kiya*, glossed 'did', appearing in Furby and Furby (1977b:56 ex.18) and given below (112) to contrast with Wanyi *-kiya*, is most likely another allomorph of the desiderative past.

The desiderative nonpast seems too, from the limited information available, to have part of the function of the Wanyi irrealis. There are only two examples available, and the positive one does not clearly illustrate the function given for it above.

(103) *Nanda jal-imi ngayu bangungu stuwa-yurri wudumba ngayu*
WG if-DES.NONP 1sg west:LOC store-ALLA get:UNM 1sg
wanu nganyi.[35]
tobacco 2sg:DAT
'If I were to go to the store in the west, I would get you some tobacco.'

(104) *Miku nangka-ma nangk-imi dula-ba.*
WG not 3sg:REFL-only 3sg:REFL-DES.NONP remove-UNM
'He, by himself, does not pull himself (out of the bog).'

Wanyi *-yama* 'only' seems to correspond to the Garrwa limitative. The Wanyi form is illustrated in (105) and the Garrwa in (106).

(105) *Bawa ngaki-nkany ngawu-yama.*
Wa elder.brother 1sg:GEN-PRIV 1sg-ONLY
'I've got no brothers; there's only me.'

(106) *Naj-ba ninga-ma.*
WG see-R 2sg:ACC-ONLY
'(He) sees only you.'

The primordial *-warri* is exemplified in (107) for Wanyi and in (108) for Garrwa.

(107) *Dabarra-ba ngawu kakun-warri, dabarra-kany ngawu waliji-barri.*[36]
Wa cook-UNM 1sg fish-FIRST cook-IRR 1sg meat-THEN
'I'll cook the fish first, then I'll cook the meat.'

(108) *Najba-yi ninga-warri jakuwanda-na.*
WG see-PAST 2sg:ACC-FIRST creek-LOC
'You were the first one (I) saw at the creek.'

A form *mirra* in Wanyi is transcribed as a free form in *wambukany mirra* (*wambu* 'sick', *-kany* privative), translated 'not really sick' and as a bound form in *kadikadimirra* (*kadi*, *kadikadi* 'small'), translated as 'one little one'. Compare Garrwa *walkurramirra* 'very big' (*walkurra* 'big'). A use corresponding to that with pronouns in Garrwa (see Furby 1972:15; the form is *-mmirra*) is not attested for Wanyi. See the notes on the Garrwa 'intensifier' above, and especially note 34.

A clitic *-kiya*, glossed 'maybe', is exemplified in (109)–(111). The Garrwa example with *-kiya* is given as (112); however, the meaning of the Wanyi form seems rather to correspond to the Garrwa abilitative, and this is illustrated in (113)–(115). In fact, as noted above, the Garrwa *-kiya* seems most likely to be another allomorph of the desiderative past. The Wanyi word *jalikiya* 'nearly' may also contain *-kiya* (and perhaps *jala* 'now').

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35 Note, *nanda jala* together can have the meaning 'if' or 'when'; see Furby and Furby (1977a:16).

36 Note that *kaku* is followed by the suffix *-n*, unless the clitic is actually *-nwarri*.

(109) *Ngamuku-kiya nana-ngkurru jila,*
Wa suppose-MAYBE there-ALLA go:UNM

nyulu-kiya bij-ba-rri nga ngamuyu-kiya?
3sg-MAYBE bite-UNM-THEN 1sg:ACC suppose-MAYBE
'If I go there again he'll bite me again.'

(110) *Ngamuyu-kiya ngamba wambu.*
Wa suppose-MAYBE 1pl.in sick
'We might get sick.'

(111) *Walimi-kiya nana bidirrika.*
Wa right-MAYBE that kangaroo
'That's right, it is a kangaroo.'

(112) *Miku-kiya kuyu jangkurr nangangi.*
WG not-DID take word 3sg:GEN
'He did not take his word.'

(113) *Wurru-wali mada kuyu-yi.*
WG scrub-ABIL also take-PAST
'(He) might have gathered scrub-wood also.'

(114) *Miku-wali wudumba.*
WG not-ABIL get:UNM
'(He) cannot get (it).'

(115) *Bilyiny-ba nganyi-ngk-iyi nukami.*
WG swell-UNM 2sg-REFL-ABIL foot
'Your foot might swell.'

8 Conclusion

Comparison of other function words in Wanyi and Garrwa would be interesting, but the data on most such morphemes are so fragmentary at present that this is probably not worth attempting. Furby and Furby (1977a) give information on conjunctions in Garrwa, but there is not enough information on their Wanyi counterparts for a comparison. Information on free-form aspect markers and other such grammatical words is lacking for both languages.

The many correspondences in grammar, especially the pronoun inventories, confirm the conclusion that these languages are closely related, but at the same time the substantial differences in grammar suggest that they must be mutually unintelligible — closely related languages rather than dialects of a language. Relationships to other languages are not clear, but correspondences with the West Barkly languages especially are worth further study.

Appendix: Wanyi and Garrwa lexicon sample

A comparative list of 179 items in Wanyi and Garrwa. A word that is attested for only one Garrwa dialect is marked (WG) or (EG) as appropriate. The list is not complete for Eastern Garrwa, and many items are not well attested.

	Wanyi	Garrwa
man	*burrurri*	*nganinyi*
woman	*kirriya*	*jibarri*
old man	*kuluwuluku, wululuku*	*malbu, wululuku* (WG)
old woman	*ngandaarra*	*badibadi*
boy	*juka*	*juka*
girl	*ngila*	*ngila*
baby	*bulumirri*	*badada*
father	*murriba, wulu-*	*nijanganjinyi, bukaka-, banana-*
mother	*ngada-, bujarra*	*ngada-, bujarra* (EG), *yarriji* (EG)
elder brother	*bawa-*	*bawa-*
elder sister	*balala-*	*maju-, balala-* (EG)
wife	*mangkarri, mani*	*mangkarri* (EG), *mani-* (WG)
name	*niji*	*niji* (WG)
head	*kuyi*	*kuyi, kulaji*
head hair	*nyungka*	*nyungka*
face, forehead	*wali*	*wali*
eye	*rami*	*yami* (EG also *rami*)
nose	*mulu*	*mulu*
ear	*kuwada*	*kuwada*
mouth	*janyi*	*janyi*
tongue	*nganjaa*	*nganjal* (EG), *jalinyi* (WG)
tooth	*mayi*	*mayi*
beard	*jamanku*	*jamanku* (EG), *jamuka* (WG)
throat	*duka*	*ngundungundu* (EG), *duka* (WG)
nape	*janki*	*janki*
shoulder	*bikali, ngaba*	*ngaba, bikali* (EG)
armpit	*ngarrala*	*wajimbangu* (WG)
arm	*jalu*	*jalu*
elbow	*munju*	*mundarrinyi* (EG), *munu* (WG)
hand	*mani*	*mani*
fingernail	*yilwi*	*yirrilyi* (EG), *yilwil* (WG)
heart	*kudulu*	*kudulu*
liver	*malambi*	*malambi* (EG), *jungayi* (WG)
stomach	*muwa*	*muwa*
faeces	*mida*	*mida*
thigh	*nala*	*nala*
knee	*murrungku, muji*	*marrandi* (EG), *muji* (WG)
foot	*nukami*	*nukami*
bone	*nguli*	*nguli* (WG)
blood	*balungka*	*ngulya*
hungry	*balikayajba*	*balikayajba* (EG), *windajibi* (EG), *birrkalijba* (WG), *windikanyi* (WG)
thirsty	*nganmarrkijba*	*warinjijba, waringkanyi*
sick	*wambu, janyba*	*kili, janyba* (EG), *lunji* (WG)
frightened	*durrajbi*	*marrala*
sore	*biwi*	*biwi* (WG)
porcupine	*nyinbu*	*nyinbu, nyilangunya* (EG), *nyili* (WG)
dog	*dara*	*bajangu*
dingo	*warrki*	*warrki*

	Wanyi	Garrwa
tail	*bambulara*	*burrka, biraji* (WG), *jidimbi* (WG)
flying fox	*balaki*	*balaka* (WG)
bird	*julaki*	*julaki*
egg	*makulu*	*makulu*
emu	*kananganja*	*kananganja*
brolga	*dangarrkaala ?*	*darrumanji* (EG), *dakudiji* (WG)
turkey	*kaninya*	*wundurri, kaninya* (EG), *kundabarra* (WG)
pelican	*walanybirri*	*balubalu*
eaglehawk	*jarrbikala*	*jalbarramba*
kite hawk	*bukaji*	*bukaji*
crow	*wangkula*	*wangkula*
white cockatoo	*barrawa*	*barrawa* (EG), *barral* (WG)
black cockatoo	*lirradu*	*lirradu*
galah	*kilyingkilyi*	*dinkili*
kookaburra	*danmurra*	*banduringi* (EG), *dalmurra* (WG)
snake	*miya*	*miya*
crocodile	*kaburrukaja*	*warukaja* (EG), *darrawujama* (EG), *kaji* (WG)
fish	*kaku*	*kaku*
fly	*kunama*	*kunima, miyimiyi* (WG)
mosquito	*liwi*	*wadikiki*
ant	*biraki*	*biraki* (WG)
louse	*dunuu*	*dunurr* (WG)
tree	*kunda*	*kunda, darrangku*
leaf	*yilaka*	*wanjirr*
root	*yarrala*	*balawala* (WG), *landurr* (WG), *jirrannyi* (WG)
bark	*jiba, kalu*	*kalu, waba* (WG)
grass	*kanba*	*kanba*
sky	*bala*	*bala* (WG), *laliji* (WG)
sun	*duru*	*kamba*
moon	*balangarra*	*yakali* (EG), *yakal* (WG)
star	*jinkiji*	*jinkiji* (EG), *kambirriji* (WG), *warrawiji* (WG)
wind	*wurrarra*	*kunba* or *wunba* (EG), *yunkurr* (WG)
ground	*jamba*	*jamba*
sand	*kalabi*	*jundurr* (WG)
red ochre	*malala*	*kunjul* (WG)
stone	*kara*	*dungala, kara* (EG), *kuda* (EG)
water	*wanami*	*wabuda, wanami* (EG), *nguwu* (WG)
cloud	*ngalu, nguraji*	*ngurul* (EG), *ngalu* (WG)
rain	*wanami*	*wanami* (EG), *janja* (WG)
river	*kala, manangka*	*manangka, bundal* (WG)
flood	*dumularra, mali*	*yajkumbanarra* (EG), *mali* (WG), *kumu* (WG)
camp	*raji, wanba*	*banda, raji* (EG), *yaji* (EG)
humpy	*wukaana, wadara*	*wadara* (EG), *barrawu* (WG)
meat	*waliji*	*bannyi, waliji*
tucker	*mama*	*mama, wada, manja* (WG)

	Wanyi	Garrwa
fire	*jangu*	*jangu*
flame, light	*mabiba*	*minbi* (WG)
ashes	*julwu, kunnga*	*kanbuna* (EG), *julurr* (WG), *munkul* (WG)
smoke	*kinnga*	*kunnga?* (EG), *kunngarr* (WG)
spear	*mukura*	*wuni, mukura* (EG), *balamurru* (EG)
boomerang	*jukuli*	*ngubungu, jukuli* (EG)
shield	*kalingirri*	*jaruma* (EG), *kalingirri* (WG)
axe	*kuluu, maraki*	*maraki* (EG), *lama* (WG), *majaja* (WG)
word, language	*yanyi*	*jangkurr* (WG), *yanyi* (WG)
north	*langkurri*	*langki*
south	*kula*	*kula, nginiri* (EG)
east	*karriwarri*	*karri*
west	*bayingu*	*bayingu* (EG), *bayungu* (WG)
near	*yidku*	*bundu* (WG)
far	*juni*	*juju, barranyi* (WG)
up	*kingkarri*	*kingkarri*
down, below	*wajka*	*wajka* (WG)
now, today	*jala, yiningki*	*jala*
by and by	*kamu, baku*	*baku, kamu* (WG)
yesterday	*bungkaana*	*bungkaana* (EG), *wulani* (WG)
tomorrow	*mudunama*	*munganawa*
long ago	*wabula*	*wabula, wankala* (WG)
night, dark	*wunduru, juwala*	*munga*
good	*walyuku*	*kunyba, yabi* (WG)
bad	*nurru, bari*	*barrki* (EG), *balki* (WG)
big	*wuluku*	*walkurra*
small	*kadi*	*bayakada, bayayawa*
long	*kanawa*	*wunanybala, ngalukama* (EG)
short	*kulaa?*	*Munduri* (EG), *kudalirri* (WG)
wet	*mannga*	*jilbi* (WG)
dry	*kundi*	*duku*
hot, heat	*ngarangara, ngadara?*	*Ngadara?* (WG)
black	*ngujuruka*	*kukudu*
white	*bunaja?*	*Bunyala* (WG)
heavy	*jalwa*	*ngiruka* (WG)
one	*yingkanyi*	*yingamali, yingkanyi* (EG), *yalkunyi* (WG)
two	*kujarra*	*kujarra*
many	*kaja*	*kudukudu, kanymadu* (EG), *kaja* (WG)
be standing	*karrinja*	*karrinja*
stand up	*lalujbu*	*anga* (WG)
sit	*jungku*	*jungku*
lie, sleep	*kudijbi*	*kuluka*
see	*najba*	*najba*
hear	*laji, manku*	*laji* (EG), *manku* (WG)
smell (tr)	*bajalijba*	*bajalijba*
eat	*jarrba*	*jarrba, wadamba* (WG)
drink	*ngaraba*	*ngaraba*
bite	*bijba*	*bijba*
die	*kuda, janyba*	*janyba, janymama* (WG)
speak	*yanyba*	*yanyba*

	Wanyi	Garrwa
tell	*ngurubu*	*karu*
know	*jiringkijbi*	*jingkijba*
call out	*kayi*	*kaya, waka* (WG)
cry	*ngindi*	*ngindu*
laugh	*nguyulibi*	*kakalijba*
go	*jila*	*jila*
come here!	*kawa*	*kabukawa*
return	*kannga*	*wijba*
enter	*jarijba*	*ngankijba*
run	*burrbijbi*	*wilku*
climb	*kajilaba*	*kirrijba*
jump	*bulubarrba*	*bulbulkijba* (WG)
fall	*yirrbinkirrbi, burrumani*	*yirrba, wirrba* (WG)
swim	*bilyikija, banjarrba*	*banjarrba* (WG)
fly	*babababa*	*baba*
make	*mirramba*	*yabimba, yarrijba* (EG), *kunymamba* (EG)
give	*windijbi*	*wajba*
get	*nanganja*	*wudumba*
put down	*nijba*	*nijba* (EG), *yarrijba* (WG)
carry, take	*ngaba*	*kuyu, ngaba* (EG)
steal	*ngirra*	*ngirra* (EG), *maninjakujba* (WG)
look for	*kujba*	*kujba*
hold	*marrijbi*	*marrimba*
burn (intr)	*rajba*	*yajba, rajba* (EG), *danyka?* (WG)
cut	*karrba*	*karrba* (EG), *dalba* (WG)
chop	*daya*	*daya*
hit	*daba*	*daba*
break	*ramijbi*	*dalyamba*
throw	*janbijbi, janyba*	*janyba, janybijbi* (EG)
hit (with boomerang), shoot	*rangkijbi, rangimba*	*rangimba, rangkijbi* (EG)
spear	*kalijbi*	*ngarrkadaba*
dig	*kurrijba*	*kurrijba*
bury, cover	*makaraba*	*makaba*
tie	*kajbilijb*	*kijijba* (WG)
rub	*namirrbi*	*namba, wujkujba* (WG)

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15 *Wanyi and Garrwa comparative data: an update*

HUGH BELFRAGE

1 Introduction

Research conducted on Garrwa in 1991–92 (see Belfrage 1992), after the first version of Gavin Breen's article for this volume, enables a few points of correction and clarification to be made. There prove to be five verbal conjugations in Garrwa (Table 1). Rather than the four inflected forms of Garrwa verbs identified by Breen there are six: Unmarked, INFinitive, Purposive, Sequential, Same-Subject and Different-Subject (Table 1). As Breen describes, there is a system of clitics that mark tense, aspect and mood. These are thirteen in all, and appear most commonly on pronouns and verbs, but also on a variety of other word classes (Table 5).

In the light of this information for Garrwa I have also revised Breen's analysis of Wanyi verb data, proposing four conjugations, which parallel the Garrwa conjugations (Table 3).

2 Verb conjugations

The following table shows the six inflections found on Garrwa verbs, by conjugation. Square brackets indicate a form that is not attested in existing data but is suggested from the rest of the paradigm. Round brackets indicate segments that are realised in some instances.[1]

[1] The case of the Different-Subject (-(*j*)*kanyi* and Infinitive (-(*j*)*kurri*) inflections within the J conjugation can be described by the rule /*j*/ –> [c] ~ [Ø]: in pronouncing a given word a given speaker will realise the /*j*/ on some occasions and not on others. Within the Ø conjugation, Ø –> /bi/ /N+__ where N = a nasal segment, e.g. *jany-bikanyi* (blow-INFIN); *yany-bikurri* (speak-DIFF SUBJ). This rule can be restated with a condition to account for the consistent appearance of the sequence /bi/ in M conjugation inflections as well: Ø –> /bi/ /N__ in the case of roots where the /ba/ of their UNMarked inflection is preceded by a nasal segment. This rule accounts both for the cases where the nasal is root-final (Ø conjugation) and those where it is thematic (M conjugation)

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Table 1: Garrwa Verb Inflections by Conjugation

Inflection	Conjugation				
	J	M	Ø	RRI	N
Unmarked	*-jba*	*-mba*	*-ba*	*-Ø*	*-Ø*
Purposive	*-ji*	*-mbiji*	*-(bi)ji*	*-nki*	*-nki*
Sequential	*-jiwa*	[*-mbijiwa*]	*-[(bi)]jiwa*	*-rrijiwa*	[*-nkiwa*]
Same-Subj. Subord.	*-jina*	*-mbijina*	*-(bi)jina*	[*-jina*]	*-jina/-nkina*
Diff.-Subj. Subord.	*-(j)kurri*	*-mbikurri*	*-(bi)kurri*	[*-rrikurri*]	*-nkurri*
Infinitive	*-(j)kanyi*	*-mbikanyi*	*-(bi)kanyi*	[*-rrikanyi*]	[*-nkanyi*]

Table 2 gives examples of verb forms, by conjugation and inflection.

Table 2: Examples of Garrwa Verb Inflections by Conjugation
(- - - - = not attested)

Inflection	Conjugation				
	J	M	Ø	RRI	N
Unmarked	*yundi-jba* 'cook'	*wada-mba* 'feed'	*jarr-ba* 'eat'	*jungku-Ø* 'sit/stay'	*ngindu-Ø* 'cry'
	kakali-jba 'laugh'		*jany - ba* 'die/throw/blow'	*kuluka-Ø* 'sleep'	*baja-Ø* 'play'
Purposive	*yundi-ji* 'cook'	*wudu-mbiji* get	*da-ji* 'hit/fight'	*jungu-nki* 'sit/stay'	*baja-nki* 'play'
			yany-biji 'speak'	*kuluki-nki* 'sleep'	
Sequential	*jila-jiwa* 'walk/go'	- - - -	*jarr-jiwa* 'eat'	*jungku-rrijiwa* 'sit/stay'	- - - -
			yany-bijiwa 'speak'	*kuluja-riijiwa* 'sleep'	
Same-Subj.	*yundi-jina* 'cook'	*yabi-mbijina* 'make'	*da-jina* 'hit/fight'	- - - -	*ngindu-jina* 'cry'
			yany-bijina 'speak'		*langa-nkina* 'hang'
Diff.-Subj.	*yundi-jkurri* 'cook'	*yabi-mbikurri* 'make'	*da-kurri* 'hit/fight'	- - - -	*ngindu-nkurri* 'cry'
	yundi-kurri 'cook'		*yany-bikurri* 'speak'		
Infinitive	*jila-jkanyi* 'walk/go'	*yabi-mbikanyi* 'make'	*bal-kanyi* 'go'	- - - -	- - - -
	jila-kanyi 'walk/go'		*jany-bikanyi* 'die/throw/blow'		

Table 3 (i): Wanyi Verb Inflections by Conjugation

English	Stem	Realis	Irrealis	Same-Subj.	Diff.-Subj.	Imperative
'cover'	*makarra-*	*-ba*	*-kany*	*-jin*	*-kurru*	*-Ø*
'eat'	*jarr-*	*-ba*	*-kany*	*-jiny*	- - - -	*-a*
'hit'	*da-*	*-ba*	*-jkany*	*-jin*	*-jkurru*	- - -
'go, walk'	*jila-*	*-ba/-Ø*	*-kany(i)*	*-jin*	*-kurru/jurru*	*-ny(i)*
'speak'	*yany-*	*-ba*	*-kany*	*-jin*	*-kurru*	*-ja*
'drink'	*ngara-*	*-ba*	- - - -	- - -	- - - -	*-ji*
'jump'	*bulubarr-*	*-b(a)*	*-kanyi*	- - -	*-kurru*	*-j*
'see'	*na-*	*-jba*	*-jkany*	*-jin*	- - - -	*-ja*
'sleep'	*kudii-*	*-jb*	*-jkanyi*	*-jin*	*-kurru*	*-Ø*
'bite'	*bii-*	*-jb*	*-jkany*	*-jin*	*-kurru*	*-ya*
'give'	*windii-*	*-jb*	*-kany*	- - -	- - - -	*-ng*
'sit'	*jungku-*	*-Ø*	*-rany*	*-na*	*-wurru*	*-m*
'stand'	*karrinja-*	*-Ø*	*-yany*	*-na*	*-wurru*	*-mu*
'cry'	*ngindi-*	*-Ø*	*-yany*	- - -	*-wurru*	*-m*

For Wanyi, Breen proposes three conjugations, V, J and M, and a group of irregular forms (this volume, §6). With the Garrwa conjugations in mind I propose that the verbs given in Breen's Wanyi conjugation table (his Table 9) be regrouped as presented in Table 3 (i).

The additional verbs[2] shown in Table 3 (ii), while recorded only in Realis/Unmarked forms, represent a group that makes up a further conjugation:

Table 3 (ii): Wanyi Verb Inflections by Conjugation

English	Stem	Realis
'put out fire'	*jari-*	*-mbi*
'squeeze'	*jidiyi-*	*-mbi*
'finish'	*dawurru-*	*-mba*
'join together'	*marda-*	*-mba*

Four conjugations are clear from this arrangement.[3] Futhermore it reveals a striking parallel between the Garrwa and Wanyi material: three of the Wanyi conjugations correspond to the Garrwa J, M and Ø conjugations respectively, and the fourth Wanyi conjugation corresponds to the RRI and N Garrwa conjugations collapsed together.

Comparison of the two tables of inflections indicates three, and possibly four inflections common to both. The Realis/Unmarked, Same-Subject and Different-Subject inflections of both languages are clearly cognate while Wanyi's Irrealis and Garrwa's Infinitive appear likely to be.

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2 Any Wanyi data additional to what is in Breen's article comes from Osborne (1967).

3 Superficial differences between allomorphs, such as *-jb* and *-jba*, *-jkanyi* and *-kanyi* and *-m* and *-mu*, may be explainable as pronunciation variations. The underlying form of the Imperative inflection in the upper two groups of this chart remains unclear.

Purposive and Sequential inflections are found in Garrwa but not Wanyi. The Imperative morpheme, seen in Table 3 (i) as a verbal inflection in Wanyi, occurs as a clitic in Garrwa with distribution across a wide range of word classes (Table 5).

Table 4 shows a representative sample of verbs from the wordlist in Osborne (1967). They all have the Realis inflection, apparently the citation form. Vowel harmony accounts for the word-final vowel alternations.

3 Verbal inflections

The Unmarked inflection corresponds to Breen's Realis while the Infinitive, Same-Subject and Different-Subject inflections correspond to Breen's inflections of the same names. I have not used the qualifying 'Subordinate' in referring to the Same-Subject and Different-Subject as all the verbal inflections except the Unmarked are associated with verbs that are subordinate in some sense.

The Unmarked inflection is so called because it appears to be semantically empty. I have also preferred this gloss to Breen's gloss, 'Realis', as there is a clitic, the ABILitative, hosted by verbs in the Unmarked/Realis form that signifies reduced realis.[4] It seemed sensible to reject an analysis where a given verb form could signify both realis and irrealis meanings, and I have reflected this in the glosses.

Table 4: Wanyi Verbs by Conjugation from Osborne (1967) (Unmarked/Realis Inflection) (Corresponding Garrwa Conjugation labels have been used)

Corresponding Garrwa Conjugation label			
M	J	Ø	RRI/N
jari.mbi	*burubi.jbi*	*bajibid.bi*	*ngunyi*
'put out fire'	'run'	'smell' (vt)	'sleep'
jidiyi.mbi	*duwarri.jbi*	*bid.bi*	*nyindi*
'squeeze'	'blow'	'bite'	'cry'
dawurru.mba	*kudi.jbi*	*kardbid.bi*	*birrirri*
'finish'	'sleep'	'cut (off)'	'shiver, shake'
marda.mba	*kuri.jbi*	*kadbulid.bi*	*daji*
'join together'	'scratch, dig'	'tie up'	'chop, cut'
mirra.mba	*windi.jbi*	*karrid.bi*	*buwarraji*
'make, do'	'give'	'light fire'	'dream' (v, n)
wuja.mba	*balaka.jba*	*janbid.bi*	*kulikuli*
'stop, prevent'	'be.hungry'	'throw, blow'	'get down'
jariya.mba	*bira.jba*	*nid.bi*	*wilijiri*
'take away'	'sing'	'put down'	'pull'
munga.mba	*durra.jba*	*namid.bi*	*ngira*
'night [?darken]'	'be frightened'	'rub'	'steal'
	kuda.jba	*nanmadkid.bi*	*janja*
	'die'	'?be thirsty'	'soak'

4 Examples are from the writer's data. The letter 'A' in example numbering stands for 'Appendix', to distinguish them from the examples in Breen's section.

ra.jba 'burn'	*mudamudaji.bi* 'tie'	*liyuwa* 'break'
wa.jba 'spit'	*nguyuli.bi* 'laugh'	*karrinja* 'stand, stand up'
garingka.jba 'take away'	*jad.ba* 'eat	*bulwa(na)* 'dive'
kudu.jba 'be deaf, forget'	*nad.ba* 'see'	*mayangka* 'push'
	ngaran.ba 'pant'	*ngamankarra* 'hunt'
ku.jbu 'look for'	*nga.ba* 'bring'	*bilikija* 'swim'
lalu.jbu 'get up, leave'	*kajala.ba* 'climb'	*jungku* 'sit, stay, live'
	dabarra.ba 'cook'	*najudu* 'visit'
	da.ba 'hit, fight, kill'	*kudkulu* 'cough'
	ngara.ba 'drink'	
	lanja.ba 'split'	
	ngud.ba 'wave'	

(1) *Kili-Ø=wali* *ngayu* *jarr-ba* *ngujbul-Ø* *nanama* *waliji-Ø.*
be.sick-UNM=ABIL 1sg.NOM eat-UNM bad-ACC that.ACC meat-ACC
'I would be sick if (I) ate that bad meat.'

(2) *Miku* *ngayi=yi* *wa-jba* *narri-nya* *jangu-nyi.*
neg 1sg.ERG=ABIL give-UNM 2pl-ACC fire-DAT
'I can't give you any of that fire.'

The Unmarked is by far the most common inflection. This is apparently explained by the fact that it is the only form in which a single main verb may appear. Furthermore, only verbs in the Unmarked form can be cliticised, or further inflected to form a participle, which can carry normal morphology.

The Unmarked is clearly related to the Wanyi Realis, morphologically and, to a lesser extent, semantically. The Unmarked inflection allows a tensed interpretation whether or not tense or temporal context is specified, by clitic or lexically. It should however be mentioned that tense commonly is specified.

(3) *Ngayu* *na-jba* *wajka* *nangkawa-na* *babulu-Ø.*
1sg.ERG see-UNM down lagoon-LOC buffalo-ACC
'I saw that buffalo down at the lagoon.'

(4) *Ngayu* *jungku-Ø* *ngandu-na.*
1sg.NOM sit-UNM shade-LOC
'I am sitting in the shade.'

Verbs with the Infinitive inflection are found with three distinct functions: within a subordinate clause, forming a participle and within a type of negative construction. Forming a complement to a main verb includes the purposive meanings noted by Breen (this volume, §6.4). These can also be expressed using the Purposive inflection (see below) although it is not clear how these two differ.

In one exception to this function of encoding subordinate status, the Infinitive is not used for complements of verbs of perception (e.g. 'She saw him crying', 'I heard them talking'). In these cases the Same-Subject or Different-Subject inflections are used (examples 10f. from Furby and Furby 1977).

(5) *Karu-Ø ngan=i yundi-kanyi waliji-Ø munganawa.*
tell-UNM 1sg.ACC=PST cook-INFIN meat-ACC tomorrow
'(She) told me to cook the meat tomorrow.'

(6) *Karu-Ø=kiyi nanda yundi-kanyi!*
tell-UNM=IMP that.SP.NOM cook-INFIN
'Tell him (lit. 'that') to cook (it)!'

(7) *Yany-ba ngay=i nanga-ngi yabi-mbikanyi banda-Ø.*
speak-UNM 1sg.NOM=PST 3sg-DAT make-INFIN camp-ACC
'I talked to her about [her] making a camp.'

(8) *Nyulu yabi-mba kalingirri-Ø*
3sg.ERG make-UNM shield-NOM

wurrkudi-kanyi ngubungu-Ø wabula.
block-INF boomerang-NOM before
'He (would) make a shield to block boomerangs in the old days.'

A second function of the Infinitive inflection is to form a participle. This use is not well understood and it is not clear how a participle formed with the Infinitive differs from one formed with the 'ADJectiviseR' (see Breen this volume, examples (24) and (25)). Stems inflected with the Infinitive are found in simple predicative and attributive constructions. They are not, however, found realising predicator arguments, as is the ADJectiviseR participle. An example showing the Unmarked form of *rindaji-jba* ('be.hungry-UNM') is given first for comparison.

(9) *Rindaji-jba ngay=a jukubayi-nyi.*
be.hungry-UNM 1sg.NOM-PRES sugar.bag-DAT
'I hunger for sugar-bag.'

(10) *Juka-wanyi rinda-kanyi-wanyi yundi-jba=ngka nanga-ngi wanjarra-Ø.*
boy-ERG be.hungry-INF-ERG cook-UNM-PRES 3sg-DAT meat-ACC
'The hungry boy is cooking meat for himself.'

(11) *Rinda-kanyi-Ø nanda kaburr-Ø.*
be.hungry-INF-NOM that.SP.NOM boy-NOM
'That boy is hungry (lit. 'is hungering').'

The INFINinitive inflection is also attested expressing a general negative proposition. This may well be a third function of the Infinitive although it cannot be well described at this point because of a lack of examples.

(12) *Miku jarr-kanyi bijbarr-Ø warrangkuli-Ø.*
neg eat-INFIN bitter-NOM warrangkuli–NOM
'You can't eat warrangkuli[5] (because it's) bitter.'

The Purposive and Sequential inflections were not differentiated from the INFinitive in most earlier work.[6] The Purposive inflection has the meaning 'in order to V'. As mentioned above, it is used as an alternative to the INFinitive form to express a purposive relationship between two events, processes or states.

(13) *Kuluka-Ø ngay=i wala-jba ngay=i*
sleep-UNM 1sg.NOM=PST get.up-UNM 1sg.NOM=PST

yundi-ji rindaji-jba ngay=i.
cook-PURP be.hungry-UNM 1sg.NOM=PST
'I slept (then) I got up to cook (because) I was hungry.'[7]

(14) *Jila-jba=yi ngay=i kula-ni yany-biji Garrwa-Ø.*
go-UNM=PST 1sg.NOM=PST south-ABL speak-PURP Garrwa-NOM
'I came from the south to speak Garrwa.'

(15) *Jila-jba=ngka langi-na nayi-ngkurri jungu-nki.*
go-UNM=PRES north-ABL this/here-ALL sit-PURP
'(That man) is coming here from the north to sit down.'

As the gloss suggests, the Sequential inflection expresses the fact that the inflected verb refers to an event occurring after that previously mentioned, in the main clause. Verbs in the Sequential form are typically syntactically conjuncts and rarely stand alone as main verbs, though see example (18). As (18) demonstrates this form of a verb also permits a consequential interpretation.

(16) *Jila-jba=yi baki jungku-rrijiwa.*
walk-UNM=PST CONJ sit-SEQ
'(He) walked then sat down.'

(17) *Wada-mba=yi na-ngka baki ngara-jiwa wabuda-Ø.*
feed-UNM=PST 3sg-RFLX CONJ drink-SEQ water-ACC
'(He) ate, then he drank water.'

(18) *Kakali-jba yal-Ø =i nanda*
laugh-UNM 3pl-NOM=PST that.SP.NOM

baki yalu-Ø ngaru-jiwa wabuda-Ø.
CONJ 3pl-ERG drink-SEQ water-ACC
'They laughed at that (man) until they had to drink water.'

The Garrwa Same-Subject and Different-Subject inflections are clearly related to the Wanyi inflections of the same names. They have, however, some limitations not previously reported. They are used primarily to indicate action that is simultaneous with, or causally

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5 *Warrangkuli* is a kind of berry.

6 See for instance (Furby & Furby 1977:85ff.), although Austin notes in passing that the suffix *-ji* has a purposive meaning (Austin 1981:328).

7 It is interesting to note that simple verbal apposition permits a causal interpretation.

connected to, that referred to by the main verb. They do not permit meanings of sequentiality, nor depiction of events that are not in the same temporal and spatial frames (see §6.5 and §6.6 of Chapter 14, this volume).

4 Tense, aspect and mood: Garrwa's clitics

As Breen describes, there is a system of clitics that mark tense, aspect and mood. As clitics these are, by definition, non-obligatory categories, as in Wanyi, although Breen (this volume, §7.1) suggests otherwise. Thirteen are attested in all. They appear most commonly on pronouns and verbs, but also on a variety of other word classes, as shown in Table 5. While all clitics function as enclitics the FUTure and LIMitative clitics are also found as proclitics with pronoun hosts. (Curly brackets { } indicate a morpheme that is realised by more than one morph.)

Table 5: Distribution of Clitics in Garrwa by Word Class

Clitics	Word class of host								
	pronoun	verb	nominal	adverb	neg	demonst	interog	cardinal	conj
imperative	{=*kiyi*}	=*kiyi*	=*kiyi*	=*kiyi*	=*kiyi*	=*kiyi*	=*kiyi*	=*kiyi*	
continuous	=*wa*	=*wa*	=*wa*	=*wa*		=*wa*			
habitual	=*li*	{=*kili*}	=*li*	=*li*					=*li*
abilitative	=*yi*	=*wali*	=*wali*		=*wali*				
past	=*i*	=*yi*							
present	=*a*	{=*ngka*}							
future	=*jalja*=	=*ja*							
ya	=*ya*	=*ya*							
hortative	=*nyi*	=*nyi*							
desiderative	{=*kiyanyi*}				=*kiya*				
primordial	=*warri*								
limitative	=*mal ma*=								
negative		=*nawa*							

I will not duplicate Breen's survey of Garrwa clitics and examples, but only make a few comments.

Breen mentions the Furbys' analysis of the morpheme *-nkiwa* as having an inceptive meaning. There are, however, no examples in their corpus or my own containing this morpheme. I have made the provisional analysis that it is the N conjugation form of the Sequential inflection, and that there is no morpheme with an Inceptive meaning. This remains to be confirmed.

The meaning or function of the morpheme glossed YA is not yet understood but its occurrence and attested distribution are noted here.

5 Conclusions

The parallel nature of the verbal conjugations of the two languages is futher evidence of a close genetic relationship between Garrwa and Wanyi. There are some differences between the two sets of verbal inflections, most notably the presence of Sequential and Purposive inflections in Garrwa, but not Wanyi, and the expression of the Imperative category as a

verbal inflection in Wanyi and as a clitic with a variety of hosts in Garrwa. It is not clear in which language which innovations have occurred.

While Breen notes that most of the Garrwa clitics are attested in Wanyi there is not enough data offered from Wanyi to make comparisons here.

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VI. Issues in deep reconstruction

16 *Reconstruction of pronominals among the non-Pama-Nyungan languages*

MARK HARVEY

1 Introduction

This paper examines a number of issues that arise in the reconstruction of pronominals among the non-Pama-Nyungan languages. Blake (1988:7) reconstructed the following free pronoun set for the non-Pama-Nyungan languages.

Table 1: Blake's (1988) reconstructed free pronoun set for nonPN

	Singular	Non-singular
1	**ngay*	**nyi-rrV*
1+2	**nya*	**nga-rrV*
2	**nginy*	**nu-rrV, ku-rrV*
3	**nu* (Non-feminine) **ngaya* (Feminine)	**pu-rrV*

This reconstruction was based on a comparison of the free base/nominative pronoun paradigms from the non-Pama-Nyungan languages, for which information was available. There are recurrent similarities in parts of the forms of these free pronouns across the range of non-Pama-Nyungan languages, and I agree with Blake that a set of pronominals can be reconstructed for a proto-language ancestral to most if not all of the non-Pama-Nyungan languages. However, I argue that it is not in general possible to reconstruct free pronouns. Rather, I propose that it is paradigm of prefixes which may be reconstructed.

Free base pronouns are not the only paradigm of pronominals which appear among the non-Pama-Nyungan languages. These languages show a wide variety of pronominal paradigms. The most common paradigms are:

Nicholas Evans, ed. *The non-Pama-Nyungan languages of northern Australia: comparative studies of the continent's most linguistically complex region*, 475–511.
Canberra: Pacific Linguistics, 2003.

Harvey, M. "Reconstruction of pronominals among the non-Pama-Nyungan languages". In Evans, N. editor, *The Non-Pama-Nyungan languages of northern Australia: Comparative studies of the continents most linguistically complex region*.
PL-552:475-513. Pacific Linguistics, The Australian National University, 2003. DOI:*10.15144/PL-552.475*

FREE BASE/NOMINATIVE PRONOUNS These pronouns refer to entities in subcategorised roles. In many non-Pama-Nyungan languages, they inflect straightforwardly as nominals, and consequently appear with ergative case suffixation. In many non-Pama-Nyungan languages, there is another paradigm of free pronouns, more or less directly based on this paradigm, which function as topicalising and/or foregrounding pronouns, conveying '*As for me, as for her*, etc.' kinds of meanings.

FREE DATIVE/OBLIQUE PRONOUNS In some languages, there are no distinctive pronouns for this category — the forms consist of the Base/Nominative pronouns with a Dative/Oblique case marker. However, in many languages the free pronouns for this category are distinctive, and cannot be analysed as consisting of the Base/Nominative paradigm + a Dative/Oblique case marker.

SUBJECT PREFIXES Nearly all non-Pama-Nyungan languages have prefixes cross-referencing the traditional notion of Subject. In most cases, the same form is found for both transitive and intransitive Subjects, but in some cases, the forms are different. The only languages lacking Subject prefixes are the Eastern Mindi and Tangkic languages. The Eastern Mindi languages, and the Tangkic language Yukulta, have enclitics which cross-reference Subjects.

BOUND OBJECT PRONOMINALS Nearly all non-Pama-Nyungan languages have bound pronominals cross-referencing the traditional notion of Object. In most languages, these are prefixes, and commonly there are portmanteau forms cross-referencing both Subject and Object functions. However, in many languages Objects are cross-referenced by enclitics. Enclitics are also commonly found cross-referencing Dative/Indirect/Oblique Objects. The only languages without bound Object pronominals are three of the Tangkic languages: Kayardild, Lardil, and Yangkaal.

The Subject and Object prefix paradigms also show recurrent similarities in forms across the range of non-Pama-Nyungan languages. This paper principally compares forms from the Subject prefix paradigms which appear in intransitive verb complex forms. The comparison is focused on this category because these are the forms where the similarities are most evident. Similarities are also often evident with prefix forms which appear in transitive verb complex forms. However, the analysis of transitive prefix complexes is often problematic, and consequently their relationship to other forms is uncertain. Nonetheless, I compare transitive prefix forms in some cases, where they provide significant evidence for a particular reconstruction.

Tables A1 and A2 in the Appendix list the Intransitive Subject prefix paradigms and the basic free pronoun paradigms from those non-Pama-Nyungan languages for which reasonably reliable information is available. In examining Tables A1 and A2, it should be noted that in some languages verbal complex forms are lexicalised and show considerable irregularity. In these languages, the division of verbal complex forms into a pronominal prefix and a verb is problematic. In a number of languages, prefixes show a range of allomorphy. The prefix forms given are generally those found in verb forms which convey Past Perfective meanings. These forms showed the greatest similarity. Again, I compare prefix forms in other categories in some cases, where they provide significant evidence for a particular reconstruction.

Examination of Tables A1 and A2 shows that there is no kind of consistent general relationship among the free pronoun paradigms set out in those tables, at least in terms of the free pronoun forms as wholes. The only free pronoun which can confidently be

reconstructed is a 1min form **ngayu* (§6.1). There is some limited, and not systematically reconcilable, evidence for a 2min form **nginy*, but this form is poorly supported. There are some consistent general relationships between portions of some free pronoun forms. However, these portions are also the portions of those free pronoun forms which are either identical or similar to the corresponding prefix, and I argue that these portions of the free pronouns are in fact to be reconstructed as prefixes.

In many nonPN languages, free pronouns, particularly the augmented pronouns, consist of a pronominal base to which the appropriate prefix is attached. These pronominal bases cannot be related to one another. For example, in a number of Gunwinyguan languages the augmented pronoun forms consist of the appropriate prefix + a base morpheme; in Jawoyn *-rrang*, in Gundjeihmi *-perre*, in Ngalakgan *-kkaq*, in Rembarrnga *-(ku)nta*, and in Warray *-kirring*. The extent to which these base morphemes are used in the free pronoun paradigms varies. However they are clearly unrelated to one another, and not reconstructable for Proto Gunwinyguan.

It appears that parts of the free pronoun paradigms among the non-Pama-Nyungan languages show a similar historical relationship to the bound pronominal paradigms as that reconstructed by Dixon (1980:367) for three widely separated Pama-Nyungan languages with obligatory bound pronominal reference: Gundungura from south-eastern New South Wales; the southern dialects of Wemba-Wemba from western Victoria; and Warnman from the northern Western Desert of Western Australia. In these three languages the free pronominals consist of an invariable base and the corresponding bound affix (in Warnman the 1 person forms involve just the base, without the affix). The three languages cited by Dixon are all Pama-Nyungan. Therefore they must originally have had reflexes of the free pronoun paradigm reconstructed by Dixon (1980:334–341). This paradigm has however been displaced by a paradigm where pronominal reference is indicated by affixes attached to a base.

I argue that this has been a persistent pattern among the non-Pama-Nyungan languages. I will show that it is possible to reconstruct a number of prefixes for some language ancestral to the non-Pama-Nyungan languages. Therefore bound pronominal reference is of considerable antiquity in these languages, and their free pronoun paradigms have been continually subject to the possibility of reformation using a base and the prefixes. This is why the initial segments/syllables of the free pronoun forms of the non-Pama-Nyungan languages display recurrent similarities, but the whole free pronoun forms cannot be related to one another.

It is of course probable that the proto-prefixes that can be reconstructed for this very remote ancestral proto-language are in turn derived at some earlier stage from free pronouns. This appears to be the case for the 1min, which is the only category where a free pronoun is reconstructable. The 1min prefix **nga-* is presumably a reduced version of the free pronoun **ngayu*. Further, it is also possible that there will be examples of the standard free > bound pattern in the development of pronominals in particular languages. This is particularly likely in the minimal categories (§4.3).

A comparison of the prefix paradigms set out in Tables A1 and A2 does show the kinds of consistent general relationships which support the reconstruction of complete proto-forms. I use the term 'prefix' to refer to the bound pronominals reconstructed in this paper, as this is the standard descriptive term for bound pronominals in non-Pama-Nyungan languages. However, this usage should not be taken to imply that these bound pronominals are

necessarily ultimately to be reconstructed as prefixes, rather than as proclitics. This paper does not examine the issue of the exact morphophonological status of these reconstructed bound pronominals.

2 Synchronic structuring of prefix paradigms in non-Pama-Nyungan languages

As a general historical principle, a match between form and category is required for any reconstruction. An examination of the prefix paradigms in Tables A1 and A2 shows there is no consistent match between many prefix forms and pronominal categories among the non-Pama-Nyungan languages, as illustrated in Table 2:

Table 2: Lack of consistent match between prefix forms and pronominal categories

	1min	1aug	1+2min	1+2aug	2min	2aug	3min	3min
kV-				+	+	+	+	
cV-		+		+	+		+	
mV-			+			+		
nV-		+	+			+	+	+
nyV-		+	+	+	+		+	
ngV-	+	+	+	+	+	+	+	
yV-		+	+	+	+		+	+

Classically, there are two ways of attaining the target of a match between form and category. One is to reconcile the various forms within a particular category by positing sound changes so that they can be related as reflexes of a common proto-form. The other is to plot a plausible semantic path for a particular form to have shifted its range to mark categories that it did not originally mark, with the consequence that the forms synchronically marking a particular category may derive from distinct sources.

The first 'sound change' methodology has a comparatively limited scope in reconciling pronominal forms among the non-Pama-Nyungan languages. We may illustrate this by considering the 1aug category which, as shown in Table 2, is marked by prefix forms: *cV-*, *nV-*, *nyV-*, *ngV-*, and *yV-*. Leaving aside the vocalic correspondences, which are examined in §2.1, we may consider the consonantal correspondences. Direct or indirect historical shifts of various kinds between all of these consonants are possible, and attested in Australia. However, the variation between these consonants does not reflect the operation of consistent kinds of historical change.

For example, in both Gundjeihmi and Nunggubuyu, the 1min prefix is *nga-*. The Gundjeihmi first person augmented prefix complexes are *nga-ni-* (UA) and *nga-rri-* (A), with *ni-* and *rri-* being regular unit augmented and augmented number prefixes. The Nunggubuyu first person augmented prefix complexes are *nii-ni-* (MUA), *nii-ngi-* (FUA), and *nu-rru-* (A), with *ni-*, *ngi*, *rru-* being the regular prefixes for their respective number categories. Under the assumption of regular sound change, the only way of reconciling the Gundjeihmi and Nunggubuyu person prefix forms in the 1aug category is to propose that $_{wd}$[*nga* is the reflex of Proto Gunwinyguan *$_{wd}$[*nga* and *$_{wd}$[*ni/u* in Gundjeihmi. This is not the case (Harvey this

volume, Chapter 8). Consequently, the Gundjeihmi and Nunggubuyu person prefixes for the 1 Aug category cannot be in a regular correspondence.

The second 'semantic shift' methodology has a much wider scope in reconciling pronominal forms among the non-Pama-Nyungan languages. The synchronic patterning of prefix paradigms among the non-Pama-Nyungan languages suggests that there are cross-cutting oppositions operating at varying levels of generality in person and number categories. I hypothesise that these cross-cutting oppositions would also have operated on pronominal paradigms historically, commonly leading to the restructuring of pronominal paradigms. This has the consequence that forms, which were originally limited to one category, may be redistributed to other categories.

2.1 Prefixal vowels

Prefix vowels show highly variable correspondences among the non-Pama-Nyungan languages. The extent of this variation may be illustrated by considering the 3aug category. For this category, there is a good match between form and reference for the consonants.

(1) Bunuba *wu-rr-* ~ *pu-rr-* (after plosives), Burarra *(a)pi-rr-* (UA), *a-pu-rr-* (A), Dalabon *pa-rr-aq-*, Gajirrabeng *pe-rr-*, Gija *pV-rrV-*, Gooniyandi *pi-rr-*, Gundjeihmi *pa-ni-* (UA), *pa-rri-* (A), Kungarakany *pi-rr-*, Gunin *pi-rr(a)-*, Gurr-goni *a-pu-ni-* (MUA), *a-pu-rri-nyin-* (FUA), *a-pu-rr-* (A), Jaminjung *pu-nyi-* (UA), *pu-rri-* (A), Jawoyn *pu-*, Kunbarlang *ka-pa-rra-* (UA), *pa-tta-* (A), Larrikiya *pi-rr(i)-*, Mangarrayi *wu-rr-* ~ *pu-rr-* (after nasals) (UA), *wu-rla-* ~ *pa-* (after nasals) (A), Marra *wa-rri-* ~ *pa-rri-* (after plosives) (UA), *wa-la-* ~ *pa-la-* (after plosives) (A), Marramaninjsji *fV-*, Marringarr *fi-(rri-)*, Marrithiyel *firri-*, Miriwung, *pe-rr(V)-*, Murrinh-patha *pV-* ~ *kV-*, Na-kara *pa-na-* (MUA), *pa-rr(a)-* (FUA), Ndjebbana pi/a-*rri-* (NFUA), *pa-rru-(ka)-* ~ *parra--nya* (FUA), Ngalakgan *pu-rru*, Ngandi *pa-rri-* (MUA), *pa-* (A), Nunggubuyu *wi-ni-* ~ *-pi-ni-* (MUA), *(w)a-ngi-* ~ *pa-ngi-* (FUA), *wu-rru-* ~ *pu-rru-* (the stop-initial allomorphs occur after nasals in transitive prefix combinations) (A), Patjtjamalh *pa-rr-*, Rembarrnga *pa-rra-*, Ungarinyin *pu-rr-*, Tiwi *pi-* (Past), Wagiman *pa-*, Wardaman *(ya-)wu-rr-* ~ *pu-rr-* (the stop-initial allomorphs occur after nasals in transitive prefix combinations), Warray *pa-*, Warrgat *fV-rrV-*

In many non-Pama-Nyungan languages, the 3 Augmented category involves two prefix positions: a pronominal prefix position and a number prefix position. It may be noted that number prefixes always follow the pronominal prefix. The forms of the pronominal prefix are evidently related. All of the languages show an initial labial obstruent (*p* ~ *f*), either as the sole form or as an allomorph. In the cases of allomorphy, the other allomorphs show an initial /w/ and the factors conditioning the distribution of the allomorphs are the standard ones found after the historical operation of lenition.

The obstruent-initial form may therefore be reconstructed as the proto-form. A distinction within the obstruent class between stops and fricatives is found only among a few languages of the Daly River region. These are the languages showing /f/ (actually a bilabial fricative). It appears that these fricatives derive historically from stops by lenition, but the historical phonologies of the languages with fricatives remain to be established. Given the restricted geographical distribution of the fricatives, I reconstruct the stop **p*.

In addition to the third Augmented prefix forms already discussed, there are forms from four other languages which are also most probably members of this cognate set.

(2) Malak-malak *wV-(rrV)-*, Ngan'gityemerri *wV-t/rr(V)-*, Nungali *wi-ny-* (UA), *wi-rr-* (A), Nyigina *yi-*Tense*-rr-* ~ *wa-*Tense*-rr-*

These forms probably show the effect of lenition. However, in these languages there are no longer any obstruent allomorphs providing direct evidence for the relationship. There are also a few languages which have /p/ initial prefixes in the 3 Minimal.

(3) Gun-djeihmi *pa-* [past], Gunin *p(V)-*, Kamu *Ø-* ~ *p/ku-*, Larrikiya *p(i)-*, Limilngan *w-* (*p* initial forms in nominal prefixing), Matngele *Ø-* ~ *p/ku-*, BGW *pi-* [3>3human]

It is possible that these forms are reflexes of the 3 augmented. In Gunin, Larrikiya, and Limilngan these prefixes mark the human class within a paradigm of nominal and verbal class prefixes. Most non-Pama-Nyungan languages have noun class systems, and these noun class systems normally include a feminine and a masculine class. However Gunin, Larrikiya and Limilngan are unusual in having only a single human class instead of a feminine class and a masculine class. It may be that the single human class of Gunin, Larrikiya and Limilngan has developed through an extension of the range of the 3 augmented, presumably via indefinite and generic usages. Alternatively, it might be that these forms derive from a human class marker, now lost in most nonPN languages. The Gun-djeihmi, Kamu and Matngele forms may reflect back-formation into the minimal from the augmented.

It is of importance to note that prefix forms with an initial labial obstruent appear chiefly in the 3aug, and in a few cases in the 3min. There is only one example of such a prefix in another person category. This is the Murrinh-patha 1+2 prefix *pV-*, which varies with *thV-*, as a marker of this category. From an overall perspective, there is a good match between the 3aug category and prefixes with an initial labial obstruent.

While it is possible to reconstruct the particular initial consonant of the 3aug prefix, it does not appear equivalently possible to reconstruct the form of the vowel. The vowel reflexes include /a/, /e/, /i/, /ɨ/, and /u/. The variation between these reflexes does not reflect the operation of consistent kinds of historical change. In one case at least the vocalic variation is in direct contradiction to the patterns otherwise found. The 3aug prefix in Jawoyn is *pu-*, and in Warray it is *pa-*. Jawoyn and Warray are related and /u/ — /a/ correspondences are attested between the two languages. However the correspondence is otherwise between an /a/ in Jawoyn and a /u/ in Warray (Harvey this volume, Chapter 8). This particular correspondence forms part of a group with other vocalic correspondences which establish that vowel-raising has been a significant process in Warray. Yet the apparent correspondence in the 3aug prefix forms is the reverse. This kind of vocalic inconsistency does not otherwise appear to be characteristic of the northern languages. It is not characteristic of the Gunwinyguan languages (Harvey this volume, Chapter 8), nor of the Eastern Daly languages (Harvey this volume, Chapter 6).

There are two possible hypotheses concerning the high degree of vocalic instability exhibited by these apparent cognate sets among the pronominal prefixes. Either it shows that these apparent cognate sets are not in fact cognate sets, or it shows that there are other factors to be considered in examining the vocalic reflexes of pronominal prefixes. I argue that the second option is correct, and that there are other factors, operating on affixes generally, which affect the reconstruction of prefixal vowels.

The most important of these factors is prosody. Descriptions of the prosodic structures of the northern languages are generally limited to basic inventories, and much further work is needed in this area. However, these descriptions suffice to establish certain basic patterns which are of central importance to the diachronic development of prefixes. These patterns are illustrated in the following examples from Warray.

(4) *án+na-y*
2sgS+see-PP
'you saw him'

(5) *án-ka+na-n*
2sgS-NP+see-NP
'you will see him'

(6) *an+cúlq-mi-ny*
2sgS+fish-Aux-PP
'you fished'

(7) *àn-ka+cúlq-ma-rl*
2sgS-NP+fish-Aux-NP
'you will fish'

For purposes of morphological analysis, I refer to the word-forms in (4)–(7) as verbal complexes. Within the verbal complex, the principal division is between the prefixes and the verb. The verb consists of root/stem material together with any attendant conjugationally determined suffixes marking tense, aspect and mood. In (4)–(7), the boundary between the verb and the prefixes is indicated by the plus sign, +.

In Warray, all disyllabic words are stressed on the first syllable, regardless of their internal morphological structure. In this situation, prefixes may bear primary word stress, as in (4). For words which are trisyllabic or longer, internal morphological structure is of central importance. In trisyllabic words consisting of a disyllabic prefix sequence and a monosyllabic verb, the first prefix syllable will bear primary word stress as in (5). However if the verb is polysyllabic, as in (6) and (7), then the verb will bear the primary word stress. A monosyllabic prefix, as in (6), will be unstressed, but a disyllabic prefix sequence will bear a secondary stress on its first syllable, as in (7). While the details of stress patterns vary from language to language, the central factors summarised in (8) hold in the great majority of cases.

(8) Prefixes only bear primary word stress if the verb is monosyllabic. If the verb is polysyllabic, then the verb stem will bear primary word stress. In this situation, monosyllabic prefix sequences will be unstressed, and polysyllabic prefix sequences will bear a secondary stress, usually on their first syllable.

With regard to prefixing verbs, the non-Pama-Nyungan languages fall into a continuum. At one end of the continuum, there are languages like Malak-Malak where prefixing verbs fall into a closed class consisting of only six paradigms of verbal complex forms. These six paradigms are characterised by a high degree of surface morphological opacity. They involve 32 verb forms, of which 19 are monosyllabic. Therefore prefixes bear primary word stress in Malak-Malak.

At the other end of the continuum are languages like Warray, where the class of prefixing verbs is open. In Warray, the great majority of verb forms are polysyllabic. Consequently, prefixes do not commonly bear primary word stress. A comparison of Warray and Malak-Malak suggests that there is a correlation between the productivity and size of the class of prefixing verbs, the percentage frequency of monosyllabic verb forms, and the consequent likelihood of prefixes bearing primary word stress. This correlation holds synchronically for all non-Pama-Nyungan languages.

It is a standard hypothesis of historical linguistics that if a closed, lexicalised system and an open, regular system are related, then the open system is preferentially to be reconstructed. As such the prefixes that can be reconstructed should be analysed within the context of an open, regular system similar to that of Warray. Within the context of such a system, prefixes would not commonly bear stress, and further there would be variations between particular prefix positions as to the frequency with which they bore stress. The importance of position in relation to stress is brought out by a consideration of the number prefix forms listed in (1). Many of the 3 augmented forms involve a non-singular number prefix *rr(V)-*. This form is also found in the other augmented categories. The languages showing reflexes of this form are listed following.

(9) Alawa *rr-*, Bardi *rr-*, Bunuba *rr-*, Burarra *rr(i)-*, Gajirrabeng *rr-*, Gija *rrV-*, Gooniyandi *rr-*, Gun-djeihmi *rri-*, Kungarakany *rr-*, Gunin *rr-*, Iwaidja *rrV-*, Jaminjung *rri-*, Kamu *rru-*, Larrikiya *rri-*, Limilngan *rr-*, Malak-malak *rrV-*, Mangarrayi *rr-*, Marra *rrV-*, Marramaninjsji *rri-*, Marringarr *rri-*, Marrithiyel *rri-*, Matngele *rru-*, Maung *rr-*, Miriwung *rr(V)-*, Na-kara *rr(a)-*, Ndjebbana *rrV-*, Ngalakgan *rrV-*, Ngandi *rr(i)-*, Ngan.gityemerri *t/rr(V)-*, Nungali *rr-*, Nunggubuyu *rru-*, Nyigina *rr-*, Patjtjamalh *rr(a)-*, Rembarrnga *rra-*, Ungarinyin *rr-*, Wardaman *rr-*, Warndarrang *t(V)/rr(i)-*, Warrgat *rrV-*, Worora *rr-*, Yawuru *rr-*

The exact number category marked by this prefix varies from language to language. However, in no language does it occur in the 1min, 2min or 3min. It may therefore be reconstructed as a non-singular number marker. The initial segment may be reconstructed as **rr*, as this form is found in every language. There are a few languages which also show stop-initial allomorphs. Given their rarity, I analyse these stop-initial allomorphs as reflecting isolated fortitions. As with the 3aug pronominal prefix **pV-*, it is not possible to reconstruct the form of the vowel for the non-singular prefix. Indeed, many of the languages do not show a vowel at all.

The absence of a vowel in many languages means that there are two options historically. One option is to reconstruct only **rr*, and to analyse the forms that do involve vowels as resulting from epenthesis. The evidence is against this option. Consonant clusters are freely tolerated by a great many non-Pama-Nyungan languages, particularly across morpheme boundaries. Epenthesis is not a significant pattern in the historical phonology of the Gunwinyguan languages (Harvey this volume, Chapter 8). It is therefore preferable to take the other option and reconstruct a vowel.

If a vowel is reconstructed, then its pattern of irregular development may be accounted for in terms of the prosodic factors illustrated in (4)–(7). We have seen that the number prefix position always follows the pronominal prefix position, and therefore this ordering may be reconstructed. As the second prefix in a prefix complex, the number prefix **rrV-* would always be unstressed. Further, not only would it be unstressed, it would frequently immediately precede the primary word stress, given that verb forms are commonly stressed on their first syllable. Vowels in this particular prosodic position are very vulnerable to reduction in faster speech. I suggest that the occurrence of reduced variants would facilitate re-analysis and/or deletion of the vowel in this kind of prefix in a way not paralleled for vowels in other kinds of morphemes.

The pronominal prefix **pV-* is affected by the same factors, though to a somewhat lesser degree. The disyllabic prefix complex **pV-rrV-* may be reconstructed as marking the 3 Augmented category, or at least some subcategory within the overall category. As the first

syllable in the complex, the pronominal prefix would have borne either primary or secondary stress. However in those cases where this sequence has been reduced to a monosyllable, through the loss of the vowel in the non-singular prefix, the pronominal prefix would frequently be unstressed immediately preceding the primary stressed syllable. This would have the effects already discussed in relation to the **rr(V)-* non-singular prefix.

Another factor to be considered in relation to vocalic variability is vowel harmony. Cross-linguistically, it is affixal vowels which are most commonly harmonised, either to root vowels or to the vowels of other affixes. Examples of root vowels being harmonised to affixal vowels are rare. This reflects the universal preference for maintaining the integrity of phonological material in the root over phonological material in affixes. Examination of the prefix paradigms in Tables A1 and A2 reveals a number of examples of prefix complexes which are affected by vowel harmony. We may exemplify the effects of vowel harmony by comparing the augmented pronominal paradigms of two GN languages, Ngalakgan and Rembarrnga, which are closely related to each other.

Table 3: Exemplification of vowel-harmony effects: aug forms in Gunwinyguan

	1aug	1+2aug	2aug	3aug
Ngalakgan Pref	*yi-rri-*	*ngu-rru-*	*nu-rru-*	*pu-rru-*
Ngalakgan Pro	*yi-rr-kkaq*	*ngu-rr-kkaq*	*nu-rr-kkaq*	*pu-rr-kkaq*
Rembarrnga Pref	*ya-rra-*	*nga-rra-*	*na-rra-*	*pa-rra-*
Rembarrnga Pro	*ya-nta*	*nga-kunta*	*na-kunta*	*pu-nta*

There is no straightforward correspondence in the prefixal vowels between Ngalakgan and Rembarrnga. In Ngalakgan, the vowel of the number prefix depends on the vowel of the person prefix. This dependence presumably reflects the operation of a vowel harmony from the person prefix to the number prefix. In Rembarrnga, the prefixal vowels are all /a/. For the 3aug category, a comparison of the Rembarrnga free pronoun form with the Ngalakgan forms argues that the person prefix should be reconstructed with a **u* vowel. This in turn argues that the Rembarrnga *pa-* person prefix, found in the prefix complex *pa-rra-*, reflects a vowel harmony operating from the *rra-* number prefix. This harmony appears to have operated generally in Rembarrnga, accompanied by a remodelling of most of the free pronouns to match to the corresponding prefix.

It should be noted that these explanations of vocalic variability, as reflecting the effects of prosodic patterns and vowel harmony on affixes, cannot be applied to pronominals reconstructed and reflexed as free pronouns. Free pronouns, being phonological words, have a primary stress. In nearly all nonPN languages, stress on disyllabic phonological words is on the first syllable, in accordance with strong cross-linguistic preferences. A disyllabic free pronoun *pV-rrV* '3aug' should not show great variation in the reflexes of its initial primary stressed vowel, particularly between evidently related languages. Free pronouns are also categorised as roots, rather than affixes, and consequently would be relatively resistant to the effects of vowel harmony.

2.2 Neutralisation of person marking in pronominal paradigms

A number of nonPN languages synchronically show highly unusual neutralisations of person marking within their pronominal systems. Neutralisations of person marking in pronominal paradigms generally involve a common linking element. For example, Foley (1986:72–73) notes that the 2min and 1aug are morphologically associated in many Papuan languages. This association is found only in languages which do not distinguish a 1+2 category, and Foley suggests that the connection between the 2min and 1aug is motivated via the inclusive use of the 1aug. Neutralisations of the 2min and 1aug are also attested in a number of nonPN languages, as illustrated in Table 4.

Table 4: Neutralisations of 2min and 1aug in some nonPN languages

	2M	1UA	1A	1+2M	1+2UA	1+2A
Burarra	*nyi-*	*nyi-rri-*	*nyi-pu-rr-*	*a-rr-*	*a-rri-*	*ngu-pu-rr-*
Gooniyandi	*ci-*	*ci-rr-*	*ci-rr-*	*ci-rr-*	*ca-rr-*	*ca-rr-*
Kungarakany	*ngi-*	*ngi-rr-*	*ngi-rr-*	*ma-*	*ku-rr-*	*ku-rr-*
Marra	*ni-*	*ni-rri-*	*ni-wi-*	*na-*	*na-wu-*	*na-wu-*
Wagiman	*ngi-*	*ngi-*	*ngi-*	*ngin-*	*ngi-*	*ngi-*
Wardaman	*yi-*	*yi-rr-*	*yi-rr-*	*nga-yi-*	*nga-rr-*	*nga-rr-*
Warndarrang	*nyi-*	*nyi-rr(i)/t-*	*nyi-ti-*	*nya(ny)-*	*nga-la-*	*nga-la-*

In Burarra, this grouping also includes the 2aug. There are a couple of languages which combine 1aug, and 2aug, but again not including the 1+2 categories, set out in Table 5.

Table 5: Languages neutralising 1aug, and 2aug

	Gurr-goni	Nunggubuyu	Tiwi
1MUA	*nyi-ni-*	*nii-ni-*	*ngi-nti-*
1FUA	*nyi-rrinyin-*	*nii-ngi-*	
1A	*nyi-purr-*	*nu-rru-*	*ngi-nti-*
2MUA	*nyi-ni-*	*nii-ni-*	*ngi-nti-*
2FUA	*nyi-rrinyin-*	*nii-ngi-*	
2A	*nyi-purr-*	*nu-rru-*	*ngi-nti-*
1+2M	*arr-*	*na-*	*mu-(rri-)*
1+2MUA	*a-ni*	*ngii-ni-*	*nga-(rri-)*
1+2FUA	*a-rrinyin-*	*ngii-ngi-*	
1+2A	*ngu-purr-*	*ngu-rru-*	*nga-(rri-)*

None of these neutralisations can be explained in terms of a linking usage of the inclusive 1+2 category. The 1+2M category is distinctively marked in all of these languages, save Gooniyandi. The 1+2 augmented categories are distinctively marked in all of the languages, save Wagiman. There are other equivalent neutralisations, lacking a common linking element, attested in various nonPN languages. We may consider the paradigms in Table 6.

Table 6: Other neutralisations lacking a common linking element

	1M	1UA	1A	1+2M	1+2UA	1+2A
Mangarrayi	*nga-*	***ngi-rr-***	***ngi-rla-***	***ngi-***	*nga-rr-*	*nga-rla-*
Ngalakgan	*ngu-*	***yi-rri-***	***yi-rri-***	***yi-***	*ngu-rru-*	*ngu-rru-*
Ngandi	*nga-*	***nya-rri-*** (M)	***nya-rr-***	***nya-***	*nga-rri-* (M)	*nga-rr-*
Rembarrnga	*nga-*	***ya-rra-***	***ya-rra-***	***ya-***	*nga-rra-*	*nga-rra-*

In these four languages, one prefix form is found with the 1M, 1+2UA, and 1+2A, and another prefix form with 1+2M, 1UA, and 1A. The common marking of these two sets of categories cannot be motivated in terms of some unifying factor in one of the sets, such as second person, which excludes the members of the other set. Common marking of the 1M, 1+2UA, 1+2A set, or of the 1+2M, 1UA, 1A set and is also found in other languages.

Table 7: Neutralisations between {1M, 1+2UA, 1+2A} and {1+2M, 1UA, 1A}

	1M	1UA	1A	1+2M	1+2UA	1+2A
Gajirrabeng	*ngen-*	***yi-rr-***	***yi-rr-***	***yi-***	*ya-rr-*	*ya-rr-*
Jawoyn	*nga-*	***nyi-rri-***	***nyi-rri-***	***nyi-***	*nya-*	*nya-*
Wardaman	*nga-*	*yi-rr-*	*yi-rr-*	*nga-yi-*	*nga-rr-*	*nga-rr-*
Warndarrang	*nga-*	*nyi-rr(i)/t-*	*nyi-ti-*	*nya(ny)-*	*nga-la-*	*nga-la-*

In analysing these neutralisations, there are two factors to be considered. Firstly, the neutralisations of the combined person + number categories are absolute in only a couple of cases. In the great majority of cases, the combined person + number category is distinguished by the presence vs absence of particular number prefixes. Thus, for example, while the person prefix may be identical in the 1aug and 2min, the 1aug category is usually distinguished from the 2min category by the presence of a number marker.

Secondly, these neutralisations of disjoint reference sets all involve the first, first+second, and second persons. They do not involve the third person. The opposition between the third person (non-participants) and the other persons (participants) is one of the fundamental pronominal oppositions. The fact that the disjoint neutralisations do not involve the third person argues that the participant vs non-participant opposition is of importance in analysing these neutralisations.

I propose that the unusual, disjoint neutralisations in person marking found in various of the nonPN languages involve two cross-cutting preferences. One is a preference to indicate the participant vs non-participant opposition by commonly marking all members of the participant category. The other is a preference to distinguish the various person + number subcategories within the overall participant category. The patterns of disjoint neutralisation in person marking found in the nonPN languages partially satisfy both these preferences. We may note that the distinctive marking of combined person + number subcategories within the participant category revolves around the importance of the 1+2 combination as a category in non-Pama-Nyungan languages (§2.3.3).

The historical consequences of these patterns of neutralisation is that a prefix form in a particular category language might derive historically from some category which appears to be unrelated. Thus a 2min prefix might derive historically from a 1aug prefix, or vice versa.

Alternatively, a 1aug prefix might derive from a 1+2min form, or vice versa. However, it is unlikely that there would be any interaction between third person forms and non-third person forms.

2.3 Number categories in non-Pama-Nyungan languages

It is not uncommon for number distinctions to be neutralised within a particular person category. Thus, the English pronoun 'you' neutralises the pervasive singular vs plural distinction and creates a second person superclass. There are examples of this kind of phenomenon among non-Pama-Nyungan languages. In Gija, the second person has a common prefix: *na-* 2min, *na-rrV-* 2aug.

However, this is not of great frequency among the non-Pama-Nyungan languages. The principal interest, from the perspective of number, among the non-Pama-Nyungan languages is their treatment of the 1+2 category. We have seen that the 1+2 category is maintained as a distinctive category to some degree in the various languages discussed in §2.2. It is well known that many non-Pama-Nyungan languages categorise the 1+2 combination in the same way as the singulars, and differently from the plurals, at least in some grammatical systems. It is not uncommon for languages to treat the 1+2 combination in the same way as the singulars in some grammatical systems, and in the same way as the plurals in other systems (McKay 1978).

There is considerable variation between languages in how they treat 1+2 combinations. The extent of these differences may be illustrated by comparing Gaagudju and Warray, two languages of the western Top End. Gaagudju has perhaps the most consistent categorisation of number in terms of minimal vs unit augmented vs augmented of any non-Pama-Nyungan language. In Warray, on the other hand, this categorisation of number is quite limited, and the singular vs plural distinction is more widespread.

2.3.1 Gaagudju

In Gaagudju, information about person is conveyed in the six morphological systems: (a) the absolutive prefixes to the verb, (b) the ergative prefixes to the verb, (c) the personal pronouns, (d) the possessive prefixes to kin nouns, (e) the indirect object enclitics, and (f) the prefixes to adjectives.

These systems generally distinguish five persons: first person, first+second person, second person, third Masculine person, and third Feminine person. The Absolutive prefixes mark second person and third Feminine person identically, otherwise the five persons are morphologically distinct in all the systems. However, apart from the personal pronouns, these systems do not provide for the marking of number. Rather, number is marked by these enclitics:

(10)

=nyca	Feminine Unit Augmented
=mana	Masculine Unit Augmented
=mpa	Feminine Augmented
=ta	Masculine Augmented

The pattern of interaction between these enclitics and the person marking systems (a)–(f), apart from the personal pronouns (c), is illustrated by the paradigm in (11).

(11) a. *arrée-ya* 'I will go' — *marrée-ya* 'you and I will go'

b. *arrée-ya=nyca* 'she and I will go' — *marrée-ya=nyca* 'she and you and I will go'

d. *arrée-ya=mana* 'he and I will go' — *marrée-ya=mana* 'he and you and I will go'

e. *arrée-ya=mpa* 'they and I will go' (at least one of the group is female) — *marrée-ya=mpa* 'they and you and I will go'

f. *arrée-ya=ta* 'they and I will go' (the group is all male) — *marrée-ya=ta* 'they and you and I will go'

The pattern of number marking found in the free personal pronoun paradigms is illustrated in Table 8.

Table 8: Number marking in the free personal pronoun paradigms of Gaagudju

	MIN	FUA	MUA	AUG	MA
1	*ngaayi*	*ngaa-nyca*	*ngaa-mana*	*ngaa-mpa ~ ngee-mpa*	*ngaa-ta*
1+2	*manéerra*	*manáa-nyca*	*manáa-mana*	*manée-mpa*	*manáa-ta*
2	*ngiinya*	*nginyáa-nyca*	*nginyáa-mana*	*nginyée-mpa*	*nginyáa-ta*
3M	*naawu*	*nowóo-nyca*	*nowóo-mana*	*nowóo-mpa*	*nowóo-ta*
3Fl	*ngaayu*	*ngoyóo-nyca*			

The stems found in the Augmented pronouns do differ slightly from the stems found in the Minimal, though the two sets of stems are patently related. Nevertheless, as with the other person-marking paradigms, number distinctions are essentially indicated by the markers listed in (10). The difference with the personal pronouns is that these markers are more tightly bound, being suffixes rather than enclitics. They are suffixes rather than enclitics because in this paradigm they fall within the scope of lexical phonology: they undergo an optional lexically controlled vowel harmony process (Harvey 1992:217). The possessive prefix paradigm found with kin nouns shows only a few minor variations in form from the personal paradigm set out in Table 8.

When the number enclitics are attached to a transitive verb, they allow for multiple interpretations, with scope over the Subject, the Object, or both.

(12) *nyi-n-korée-karra=mpa*
3IIA:3MI:-see-Aux.PP=AUG
(a) 'he saw her and them';

[1] All MUA, AUG and MA forms in the third person take the masculine form as the stem. There are no third person MUA, AUG or MA forms with a feminine form as the stem (Harvey 1992: 295–304).

(b) 'he and they saw her';
(c) 'he and they saw her and them'

The (c) meaning, where both Subject and Object are non-singular, can however be specifically distinguished by the (a) construction involving an additional enclitic *=nyóorno*.

(13) *nyi-n-korée-karra=mpa=nyóorno*
IIA-3ME-see-Aux.PP=AUG=plS+O
'he and they saw her and them'

This enclitic *=nyóorno* 'plural Subject and Object' is the only morpheme in Gaagudju which operates on a singular vs plural basis.

(14) *Ka-marro-oróo-karra-y=mpa=nyóorno ngiinya-ma ngaany-ma*
3E-1+2A-look-Aux-PR=AUG=plS+O 2MIN-PRM 1MIN-PRM

iinycu ka-méerra-pu=mpa=nyóorno.
maybe 3E-1+2A-hit=AUG=plS+O
'They are looking at you and me. Maybe they will belt you and me.'

The Object in (14) is Minimal, but also plural. Its plurality is sufficient basis for the appearance of *=nyóorno*, even though in all other areas Gaagudju operates on a Minimal vs Augmented system.

2.3.2 Warray

In Warray, information about number and person is conveyed in three morphological systems: (a) the free pronouns — set out in Table 9, (b) the subject prefixes to the verb, (c) the object prefixes to the verb.

Table 9: The free pronoun paradigm in Warray

	min free	min dative	aug free	aug dative
1	*ngek*	*ngek-ku-wu*	*yikkirring ~ yikkin*	*yikkirring-u*
1+2	*nyama*	*nyama-wu*	*yepe*	*yapurr-u*
2	*nguny*	*nguny-u-wu*	*nikirring~ nikin*	*nikirring-u*
3NF	*a-karla*	*a-karla-wu*	*pikirring~ pikin*	*pikirring-u*
3F	*al-karla*	*al-karla-wu*		

This paradigm is most economically analysed in terms of the minimal vs augmented opposition. It may however be noted that the 1+2A form *yepe* is not morphologically parallel to the other augmented pronouns, which involve a stem *-(k)kirring*. The Subject prefix paradigm is set out in Table 10.

Table 10: The subject prefix paradigm in Warray

	Unmarked	Non-Past	Irrealis
1minS	*at-*	*pa-t-*	*ka-t-*
1+2minS	*ma-*	*man-ma-*	*kan-ma-*
2minS	*an-*	*an-ka-*	*kan-*
3minS	*Ø-*	*ka-*	*kan-*
1augS	*i-*	*pal-i-*	*kal-i-*
2augS	*a-*	*a-ka-*	*kan-a-*
3augS	*pa-*	*ka-pa-*	*kan-pa-*

In the Subject prefix paradigm, all augmented combinations involving first person fall within the one category. The forms listed for the 1aug category in Table 10 in fact have a range extending beyond indicating simply 1 augmented meanings. These forms are commonly found with a 1+2 minimal meaning, instead of the various *ma-* prefix forms. This is particularly common when the 1+2 minimal combination functions as a transitive Subject. As such, the 1augS category alternatively functions as a 1 plural category. Therefore, in the Subject prefix paradigm, both the minimal vs augmented and singular vs plural oppositions are operative. The Object prefix paradigm is set out in Table 11.

Table 11: The object prefix paradigm in Warray

	Singular	Plural
1	*pan-*	*in-*
2	*ana-*	*in-*
	Ø-	*pin-, pun-*

The Object prefixes collapse the inclusive/exclusive distinction, thereby removing the motivation for a minimal/augmented instead of a singlar/plural number system, and further collapse the distribution between first and second person in the plural.

2.3.3 The 1+2 combination

The 1+2 combination is the point where a number of pronominal classification systems cross-cut one another: the minimal/augmented and singular/plural number categorisation, and the inclusive/exclusive distinction. As such, the 1+2 combination may be viewed as a point of paradigmatic weakness for pronominals in systems where both minimal/augmented and singular/plural categorisations are operative.[2] The 1+2 combination is therefore a prime target for continual morphological remodelling, with flow-on effects in the marking of other non-third person categories.

The fact that alternative possible interpretations of the 1+2 combination are found synchronically in many languages also makes it likely that prefixes for the 1+2 combination will be more complex morphologically than prefixes for the other persons, as they may code information from more than one system.

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2 This point was suggested to me by Francesca Merlan.

2.4 Summary of person and number oppositions

The person and number oppositions affect the non-third persons much more than they do the third person. Consequently, it is to be predicted that prefix forms will show a much more complex distribution among the non-third persons, particularly in the non-singular number. It is of interest to note that the two cases, where the reflex sets appear to reflect two distinct proto-prefixes, both involve a third person prefix and a non-third person prefix (§4.4).

3 Considerations in the reconstruction of prefixal paradigms

In considering whether to reconstruct a particular prefix form for a particular category, the following factors are of central importance:

QUANTITY OF REFLEXES A prefix which is attested in a particular category in many languages is to be reconstructed for that category in preference to a prefix which is attested in only a few languages in that category.

GEOGRAPHICAL RANGE OF REFLEXES Discontinuous and/or peripherally distributed sets of reflexes are to be reconstructed in preference to continous and/or centrally distributed sets of reflexes.

FUNCTIONAL EXTENSION A prefix which is attested in a particular category, and in a range of functional extensions from that category, is to be reconstructed for that category, in preference to a prefix which is attested in a particular category, and in few or no functional extensions from that category (Heath 1978:74–75).

4 Non-Pama-Nyungan proto-prefixes

We have already reconstructed a prefix **pV-* for the 3Aug category, and a non-singular number prefix **rrV-* (§2.1). For the reasons discussed in §2.2–§2.4, reconstruction of prefix forms in other categories, particularly the 1+2 categories, is much less straightforward. I begin with the 1min category, where reconstruction is comparatively straightforward.

4.1 The 1 minimal **nga-*

(15) Alawa *nga-*, Bardi *nga-*, Bunuba *ng-* ~ *l-*, Burarra *ngu-*, Gajirrabeng *ngen-*, Gija *ngV-*, Gun-djeihmi *nga-*, Gunin *ng(V)-*, Gurr-goni *ngu-*, Iwaidja *nga-*, Jaminjung *nga-*, Jawoyn *nga-*, Kunbarlang *nga-*, Larrikiya *nga-*, Limilngan *ng(V)-*, Mangarrayi *nga-*, Marra *nga-*, Marramaninjsji *k/ngV-*, Marringarr *k/ngV-*, Marrithiyel *k/ngV-*, Maung *nga-*, Miriwung *nga(nV)-*, Murrinh-patha *ngV-*, Na-kara *nga-*, Njebbana *nga-*, Ngalakgan *ngu-*, Ngandi *nga-*, Ngan'gityemerri *ngV-*, Nungali *nga-*, Nunggubuyu *nga-*, Nyigina *nga-*, Patjtjamalh *nga-*, Rembarrnga *nga-*, Tiwi *ngi-*, Ungarinyin *nga-*, Wagiman *nga-*, Wardaman *nga-*, Warndarrang *nga-*, Warrgat *nga-*, Worora *nga-*, Yawuru *nga-*

The initial consonant may be reconstructed as **ng*, as this segment is found in all the languages. Somewhat unusually, it appears possible to reconstruct the form of the vowel in

this prefix as well. The majority of the languages have an /a/ vowel, and this is the vowel reconstructed. This prefix is not however immune to vocalic instability. A /u/ vowel is found in Burarra, Gurr-goni, and Ngalakgan, and /i/ vowel in Tiwi. The forms with a variable vowel (represented by V) are found in languages with lexicalised and irregular verbal forms. The variation in vowel forms appears to reflect the operation of vowel harmonies from the verb stem.

There is one caveat which must be mentioned to the reconstruction of **a* as the vowel for this prefix. As discussed in Dixon (1980:189), in some Australian languages English loanwords with an initial /a/ are regularised to a consonant-initial norm for words by the addition of /ng/ (e.g. 'iron' *ngayan*). This suggests an inherent affinity between the dorsal nasal /ng/ as an onset and /a/ as a nucleus. As such the prevelance of /a/ as the vowel in the 1Min prefix may not reflect inheritance, but could reflect a targeting of unstressed vowel variants towards the vowel most compatible with the onset /ng/.

4.2 The 1+2 minimal **mV-*

This prefix has the most limited functional and geographical distribution of all the prefixes. It is found chiefly as a 1+2 prefix.

(16) Gaagudju *marra-*, Kungarakany *ma-*, Jaminjung *minti-*, Larrikiya *mu-*, Limilngan *mi*, Tiwi *mu-(rri-)*, Uwinymil *ma-*, Warray *ma-*, Warrgat *mV-*

There are 1+2 free pronoun forms, apparently involving **mV-* in a number of languages.

(17) Gaagudju *manéerra* (min), *manáa-* (aug root), *=mani* (Indirect Object enclitic), Kungarakany *ngama-*, Jaminjung *minti*, Jingulu *mintiyila*, Kamu *ngemu*, *=ngam* (Direct Object enclitic), Larrikiya *manmiya*, *-miya* (Possessed Suffix), Limilngan *ngami*, Matngele *ngemu*, Tiwi *muwa*, Uwinymil *nyime*, Wambaya *mirnta*, Warray *nyama*

It is also found as a 2min prefix in three languages of the Nyulnyulan family.

(18) Bardi *mi-*, Nyigina *mi-*, Yawuru *mi-*

There are two issues that arise in relation to these various pronominal forms. One is whether the 1+2min forms and 2min forms should be related. There do not appear to be any examples of connections between 1+2min and 2min forms synchronically in Australia. However, in a number of Austronesian languages, the first pl inc is used a respect 2min form:

- The languages of Sulawesi generally (Mark Donohue pers. comm.). Specifically Buginese, Makassarese, Pattae', Tae', Saluan, and Buol (Erik Zobel pers. comm.), and Muna (van den Berg 1989:81)
- Kambera (Sumba) (Marian Klamer pers. comm.)
- Tetun (Timor) (Morris 1984:91; Aone van Engelenhoven pers. comm.)
- Sabah creole Malay (Paul Kroeger pers. comm.)

Given this pattern of connection between the two categories, it appears reasonable to relate the 1+2min and 2min *mV-* forms. The 1+2min forms occur in a disparate set of languages, which do not otherwise show any evidence of particular relationship. The 2min forms occur

in a contiguous group of Nyulnyulan languages. As such, **mV-* is presumably to be reconstructed as a 1+2min prefix. Given that no other prefix form is attested as a 1+2min with such consistency, or in an equivalent number of languages, **mV-* is the most plausible 1+2min proto-prefix.

The other issue is whether the longer forms should be related to the monosyllabic forms. As discussed in §2.3.3, the 1+2min category is where pronominal classification systems cross-cut one another. As such, it is likely that the marking of this category may involve forms from more than one category. The Tiwi prefix varies between *mu-* and *mu-rri-*. The longer form presumably involves the **rrV-* non-singular number prefix. The same analysis can be applied to the Gaagudju prefix *marra-*, as **mV- + *rrV-*. The Gaagudju free pronouns *manéerra* (min), *manáa-* (aug root), and Indirect Object enclitic *=mani* involve a base *manV*. The minimal pronoun has the non-singular marker suffixed to it (the augmented 1+2 pronouns bear number suffixes, like the other augmented pronouns in Gaagudju — Table 8.).

The *manV* base may have consisted historically of **mV-* plus a morpheme **nV*, though there is no direct indication as to what this **nV* morpheme might have been. It might have been a pronominal base morpheme, now otherwise lost in Gaagudju, to which pronominal prefixes were attached to form free pronouns. A similar situation is found in the Mindi languages, Jaminjung, Jingulu, and Wambaya, where the 1+2min pronominals are of the form *mi(r)ndV*. This may consist of *mi* + a morpheme *(r)ndV*, but again there is no indication as to the original function of *(r)ndV*. Given the likelihood of 1+2 pronominals consisting of morphemes from more than one system, it seems reasonable to analyse *manV* and *mi(r)ndV* as involving **mV-*.

The free pronouns in the other languages, involving *mV*, show a number of different structures. The Tiwi pronoun *muwa* shows the standard structure of prefix + base (*ngawa* 1 and 1+2 augmented, *nuwa* 2 augmented). The Larrikiya pronoun is constructed differently, but according to the standard template for Base Pronouns in that language.

Table 12: Larrikiya pronouns

	Base Pronoun	Genitive Pronoun	Possessed Suffix
1min	*ngana ~ ngananga*	*nga-niki*	*-nga*
1+2min	*manma ~ manmiya*	*ma-niki*	*-miya*
2min	*iccana*	*icca-niki*	*-na*
3min	*piyanapa*	*piya-niki*	*-pa*
1aug	*ngarrangarra*	*nga-rra-niki*	*-nga-rra*
1+2aug	*tarrantarra*	*ta-rra-niki*	*-ta-rra*
2aug	*kurrungkurra*	*ku-rra-niki*	*-ku-rra*
3aug	*pirranpirra*	*pi-rra-niki*	*-pi-rra*

A comparison of the pronoun paradigms in Table 12 suggests that the Base pronoun paradigm was composed historically in accordance with the morphological template in (19), which involved a ligature *n(a)*.

(19) Genitive Stem + *n(a)* + Possessed Suffix

The other free pronouns have *mV* as their final element. It appears that these pronouns were historically compounds, consisting of a first person prefix followed by **mV-*. This is most clearly the case in Limilngan. The Limilngan pronoun is *ngami*, and the 1min prefix is *nga-*, and the 1+2min prefix is *mi-*. The Kungarakany pronoun stem *ngama-* would have the same structure, though *nga-* lacks a direct reflex in Kungarakany. This also appears to be the case for the pronoun *ngemu*, which appears in the two Eastern Daly languages, Kamu and Matngele. We may note that the Kamu Direct Object enclitic form *=ngam* has an /a/ vowel. The enclitic appears historically to be a reduced version of the free pronoun, and it provides evidence that the pronoun was historically **ngamu*. Neither Kamu nor Matngele preserve *mV-* as a 1+2M prefix. The Uwinymil *nyime* and Warray *nyama* forms may reflect a combination with the **nyV-* prefix, which appears to have been a 1aug prefix (§4.3).

4.3 The 2min **cV-*, 1aug **nyV-rrV-*, **yV-rrV-*, and 1+2aug **ngV-rrV-*

These prefixes are most satisfactorily examined together, as a comparison of their respective ranges is central to reconstruction in these categories. We may begin with the *cV-* forms as these show the clearest association of form to category, in terms of frequency. Frequency strongly favours the reconstruction of this prefix as marking the 2min category. There are a number of factors which argue that this is an old 2min prefix. Firstly, it shows a widespread and discontinuous geographical distribution. Secondly, as discussed in §2.2, common marking of the 2min and the 1aug is found in a number of non-Pama-Nyungan languages. If this prefix was originally a 2min prefix, then extensions of its range in this direction in Bunuba and Gooniyandi may be accounted for. Thirdly, reflexes of this prefix show functional restrictions in a number of languages. As listed in Table 13, the Larrikiya, Ngalakgan, Rembarrnga, and Ungarinyin forms are restricted to transitive Subject functions. Alawa also shows *cV-* forms with a more restricted transitive Subject function: *ci-* '2min>1min', *culul-* '2aug>1aug'.

Table 13: *cV-* forms

Type	Function	Attestation
bound prefixes	1aug	Bunuba *yiyi-rr-* ~ *ciyi-rr-*, Gooniyandi *ci-rr*
	1+2min	Bunuba *yiyi-rr-* ~ *ciyi-rr-*, Gooniyandi *ci-rr-*, Murrinh-patha *thV-*
	1+2aug	Bunuba *ya-rr-* ~ *ca-rr-* (UA + A), Gooniyandi *ca-rr-*, Murrinh-patha *thV-*
	2min	Bunuba *c-*, Gooniyandi *ci-*, Larrikiya *ci-* (TS), Murrinh-patha *thV*, Ngalakgan *cu-* (TS), Rembarrnga *ta-* (TS), Ungarinyin *ca-* (TS), Tiwi *ci-*, Dalabon *ca-*
	3Fmin	Tiwi *ci-*
free pronouns	2min	Bardi *cu*, Nyigina *cuwa*, Rembarrnga *ta-nta*, Yawuru *cuyu*
	3min	Jaminjung *ci*, Ngalakgan *ciny-caq* (F)

Heath (1978:75) argues that morphemes showing functional specialisations, such as '2minTS' as opposed to '2min', are likely to be of greater antiquity.

Finally, we may note that there are three languages which have *cV* 2min free pronouns, but not *cV-* prefix forms: Bardi *cu*, Nyigina *cuwa*, Yawuru *cuyu*. Following the hypothesis that bound forms derive from free forms, Blake (1988:12) argues that the appearance of free pronouns without corresponding prefixes is an indication of more recent origin. However, I have argued that the reverse relationship commonly holds between free and bound pronominals among the non-Pama-Nyungan languages, and consequently this is evidence that **cV-* is older as a prefix.

Any consideration of *cV-* forms necessarily also involves consideration of *yV-* forms, as **cV-* forms may have lenited to *yV-* forms. The range of *yV-* forms is set out in Table 14.

Table 14: *yV-* prefix forms

Type	Function	Attestation
bound prefixes	1aug	Gajirrabeng *yi-rr-*, Gija *yi-rrV-*, Gundedjnjenghmi (BGW) *yi-rri-*, Jaminjung *yi-nyi-* (UA), *yi-rri-* (A), Miriwung *yi-rr(V)-*, Ngalakgan *yi-rri-*, Nungali *yi-ny-* (UA), *yi-rr-* (A), Nyigina *ya-*TNS*-rr-*, Rembarrnga *ya-rra-*, Wardaman *yi-rr-*, Warray *i-* (*yi-kkirring* — free pronoun), Yawuru *ya-*TNS*-rr-* [12 languages]
	1+2min & aug	Gija *yV-*, Miriwung *yV-* ~ *ya-rru-*
	1+2min	Gajirrabeng *yi-*, Ngalakgan *yi-*, Nyigina *ya-*, Rembarrnga *ya-*
	1+2aug	Gajirrabeng *ya-rr-*, Jaminjung *yu-rri-*, Nungali *yu-rr-*, Nyigina *ya-*TNS*-rr-*
	2min	Alawa *yi-*, Gundjeihmi *yi-*, Ngan'gityemerri *yV-*, Wardaman *yi-*, Yukulta *-yi* (TS)
	2aug	Ngan'gityemerri *yV-t/rr(V)-*
	3min	Nyigina *yi-*
	3Mmin	Malak-malak *yV(n)-*, Patjtjamalh *yV-*
	3Fmin	Ndjebbana *ya-*, Patjtjamalh *yVny/c-*
	3aug	Alawa *yi-rr-*, Nyigina *yi-*TNS*-rr-*

It may be observed that *yV-* forms are distributed across virtually all categories. While a number of these forms could derive by lenition from **cV-*, there is generally no positive evidence supporting this. The only exception is Alawa, where *ci-* '2min>1 min' and *culul-* '2aug>1aug' suggest that the Alawa 2min prefix *yi-* may derive from **cV-*. The cross-category distribution of *yV-* prefix forms is matched by the *nyV-* and *ngV-* prefix forms.

Table 15: *nyV-* prefix forms

Type	Function	Attestation
bound prefixes	1aug	Burarra *nyi-rri-* (UA), *nyi-bu-rr-* (A), Gunin *nya-rr-*, Gurr-goni *nyi-ni-* (NFUA), *nyi-rrinyin-* (FUA), *nyi-bu-rr-* (A), Jawoyn *nyi-rri*, Ndjebbana *nyi/a-rri-* (NFUA), *nya-rra- -nya* (FUA), *nya-rru-* (A), Ngandi *nya-rri-* (MUA), *nya-rr-* (A), Ungarinyin *nya-rr-*, Warndarrang *nyi-rr(i)/t-* (UA), *nyi-ti-* (A) [8 languages]

	1+2min	Alawa *nya-*, Jawoyn *nyi-*, Ngandi *nya-*, Warndarrang *nya-* (before consonants), *nyan-* (before vowels)
	1+2aug	Alawa *nyu-l-* (UA + A), Jawoyn *nya-* (UA + A),
	2min	Burarra *nyi-*, Gaagudju *nyiN-* (Abs), Mangarrayi *nya-*, Na-kara *nya*, Patjtjamalh *nyV-*, Ungarinyin *nyin-* (IS), Tiwi *nyi-* (NP), Warndarrang *nyi-* [7 languages]
	3Fmin	Gaagudju *nyiN-*, Gajirrabeng *nyi-*, Gija *nyi-*, Miriwung *ny(V)-*, Ungarinyin *ny(V)-*, Worora *nyi/aN-*
free pronouns	1aug	Lardil *nya-li* (dl), *nya-li* (pl)

Table 16: *ngV-* prefix forms

Type	Function	Attestation
bound prefixes	1aug	Alawa *ngu-rr-* (UA), *ngu-l-* (A), Gundjeihmi *nga-ni-* (UA), *nga-rri-* (A), Kungarakany *ngi-rr-*, Iwaidja *nga-rru-*K-, Larrikiya *nga-rr(i)-*, Limilngan *nga-rr-*, Mangarrayi *ngi-rr-* (UA), *ngi-rla-* (A), Marramaninjsji *ngV-(rri-)*, Marringarr *ngV-(rri-)*, Marrithiyel *ngirri-*, Maung *nga-rr-*, Murrinh-patha *ngV-*, Na-kara *ngi-na-_* (MUA), *ngi-rr(a)-* (FUA), *ngi-rrpa-* (A), Ngan.gityemerri *ngV-t/rr(V)-*, Patjtjamalh *nga-rra-* (UA), *nga-rr-* (A), Wagiman *ngi-*, Warrgat *nga-rrV-*, [17 languages]
	1+2min	Mangarrayi *ngi-*, BGW *ngarr-*, Wagiman *ngin-*
	1+2aug	Burarra *ngu-pu-rr-* (A), Gundjeihmi *ngarr-* (UA), Gurr-goni *ngu-purr-* (A), Mangarrayi *nga-rr-* (UA), *nga-rla-* (A), Na-kara *ngu-na-* (MUA), *ngu-rr(a)-* (FUA), *ngu-rrpa-* (A), Ndjebbana *ngi/a-rri-* (NFUA), *ngaparru(ka)- -nya* (FUA), *ngapa-rru/a-* (A), Ngalakgan *ngu-rru-* (UA + A), Ngandi *nga-rri-* (MUA), *nga-rr-* (A), Nunggubuyu *ngii-ni-* (MUA), *ngii-ngi-* (FUA), *ngu-rru-* (A), Patjtjamalh *nga-rra-* (UA + A), Rembarrnga *nga-rra-* (UA + A), Tiwi *nga-* (UA + A), Ungarinyin *nga-rr-*, Wagiman *ngi-* (UA + A), Wardaman *nga-rr-* (A), Warndarrang *nga-la-* (UA + A), Warrgat *nga-ma-* (UA + A) [17 languages]
	2min	Kungarakany *ngi-*, Wagiman *ngi-*
	2aug	Gundjeihmi *k/ngu-ni-* (UA), *k/ngu-rri-* (A), Tiwi *ng-_* (UA + A), Wagiman *ngu-* (UA + A), Warndarrang *ngu-t-* ~ *ngu-rri-* (UA), *ngu-tu-* (A)
	3min	Gajirrabeng *ngi-* (MMin), Gija *ngi-* (MMin), Nunggubuyu *ngi-* (FMin)

Disentangling the historical relationships of the *yV-*, *nyV-* and *ngV-* prefix forms is evidently an exercise of some complexity. There is only one category where comparative frequencies suffice to favour reconstruction of a particular prefix: the 1+2aug category. The *ngV-* prefix forms are much more frequently attested in this category than are the *yV-* or *nyV-* prefix

forms: *ngV-* 17 languages, *yV-* 3 languages, *nyV-* 2 languages. Therefore, I reconstruct **ngV-rrV-* as the 1+2aug prefix complex.

The *ngV-* prefix forms are also significantly more frequent in the 1aug category than are *yV-* and *nyV-* prefix forms: *ngV-* 17 languages, *yV-* 11 languages, *nyV-* 8 languages. However, there are a number of other factors to be considered in the reconstruction of this category. Firstly, both *yV-* and *nyV-* prefix forms are most commonly found in this category. The next greatest frequency for both sets of prefix forms is in the 2min category: *yV-* 5 languages, *nyV-* 7 languages. We have seen that these two categories are connected synchronically in a number of nonPN languages (§2.2), and that consequently that historical shifts between the two categories are to be expected. However, in this case, it appears that the shift would be 1aug > 2min and not the converse. We have seen that there is a variety of evidence for **cV-* as an old 2min prefix. There is no equivalent evidence for either the *yV-* or *nyV-* prefix forms as old markers of the 2min category. It is therefore most unlikely that the *yV-* and *nyV-* prefix forms were in origin markers of the 2min category.

Consequently, it would appear that the *yV-* and *nyV-* prefix forms should be reconstructed as deriving from markers of the 1aug category. I reconstruct **yV-rrV-* and **nyV-rrV-* as alternate proto-prefix complexes for the 1aug category. The greater frequency of reflexes of the **ngV-rrV-* complex as markers of this category can readily be explained. Given that **ngV-rrV-* was the 1+2aug proto-prefix complex, then its appearance in the 1aug category in many languages would follow from the continual restructuring of the first person non-singular categories, which appears to have been characteristic of many non-Pama-Nyungan languages.

The final issue to be considered in reconstructing the 1aug category prefix complex is the potential phonological relationship between the *yV-* and *nyV-* prefix forms. Among the Pama-Nyungan languages, there are correspondences between pronouns with initial laminal nasals and pronouns with an initial /y/ (Dixon 1980:336–337). Given that there are many more languages with initial laminal nasals than with initial /y/, Dixon reconstructs an initial laminal nasal, and analyses the /y/ reflexes as resulting from lenition.

However, cross-linguistically, lenition of nasals is uncommon and it is problematic to attribute the relationship between initial laminal nasals and initial /y/ in pronominal paradigms to lenition. Rather, the relevant factor would appear to be the comparative markedness of these segments in word-initial position. In overall terms, laminal nasals are highly marked in word-initial position, and consistently more marked than the laminal continuant /y/ (Hamilton 1996:217–222). On general grounds, we may expect highly marked configurations to be replaced by related, but less marked, configurations. This replacement process will not necessarily be regular (Hamilton 1996:25–26). In the inventories of Australian languages /y/ is the segment most similar to the laminal nasals — both are [-lateral], laminal sonorants. Therefore the replacement of word-initial laminal nasals with /y/ is not unexpected.

The distribution of *yV-* and *nyV-* prefix forms within each language supports the hypothesis that the relationship between the two sets of forms is phonological. In general, a language has either *yV-* forms or *nyV-* forms, but not both. The languages which have both *yV-* and *nyV-* forms are listed in (20).

(20) Gajirrabeng: *yi-rr-* '1aug', *nyi-* '3Fmin'
Gija: *yi-rrV-* '1aug', *nyi-* '3Fmin'

Miriwung: *yi-rr(V)-* '1aug', *ny(V)-* '3Fmin'
Alawa: *yi-* '2min', *nyu-l-* '1+2aug'

Gajirrabeng, Gija and Miriwoong are three contiguous languages which constitute the Jarragan family. Gajirrabeng and Miriwoong mark the feminine gender on nominals with a *-ny* suffix. The 3Fmin prefixing to verbs would appear to be related to this, and unrelated to the *nyV-* pronominal prefix forms found elsewhere. In the case of Alawa, we have already seen that there is evidence which suggests that the *yi-* '2min' form is a reflex of **cV-*. Consequently, the forms in (20) do not appear to be a counter-example to the generalisation that languages have either *yV-* forms or *nyV-* forms, but not both.

If the *yV-* and *nyV-* prefix forms are phonologically related, then they are to be reconstructed as **nyV-*, and frequency would not be a factor favouring reconstruction of **ngV-rrV-* as the proto-prefix complex for the 1aug. There would be reflexes of **nyV-rrV-* in 19 languages and **ngV-rrV-* in 17 languages.

4.4 The 2aug **nV-rrV-*, **ku-rrV-*

Blake reconstructs two proto-forms in this category, and the two are widely reflexed as 2aug prefixes.

The **ku-* prefix is one of the few prefixes where there is a strong frequency argument for the reconstruction of a particular vowel.

(21) **ku-*: *u* (11 languages), *a* (3 languages), *i* (2 languages), _ (1 language), *V* (1 language), *ka(ko)-* Ndjebbana

The evidence favours reconstruction of both **nV-* and **ku-* as 2aug forms. Both are most commonly attested in this category, and there are plausible extensions from this starting point into the other categories where these forms are attested: 2min, 1+2min, 1+2aug, 1aug. There is no significant disparity in their frequency as 2aug forms; *nV-* forms appear in 16 languages and *ku-* forms in 13 languages. As Blake (1988:12) points out geographical range favours the reconstruction of **ku-* as an older form. The reflexes of **ku-* are peripherally distributed, whereas the reflexes of **nV-* are centrally distributed. However, both sets of reflexes are discontinuously distributed.

Table 17: **nV-* prefix forms

Type	Function	Attestation
bound prefixes	1 person	Marra *ni-rri-* (UA), *ni-wu-* (A), Nunggubuyu *nii-ni-* (MUA), *nii-ngi-* (FUA), *nu-rru-* (A) [2 languages]
	1+2 person	Marra *ni-rri-* (UA), *ni-wu-* (A), Nunggubuyu *nii-ni-* (MUA), *nii-ngi-* (FUA), *nu-rru-* (A) [2 languages]
	2 person	Gaagudju *na-* (Erg)
	2min	Gajirrabeng *ni-*, Gija *na-*, Jaminjung *na-*, Larrikiya *ni-*, Limilngan *n-* (Fut), Malak-Malak *nV(n)-*, Marra *ni-*, Miriwung *nV-*, Ngandi *nu-*, Warrgat *nV-* [9 languages]

2aug	Gajirrabeng *na-rr-*, Gija *na-rrV-*, Kungarakany *ni-rr-*, Jawoyn *nu-*, Mangarrayi *nu-rr-* (UA), Marra *nu-rru-* (UA), *nu-wu-* (A), Marramaninjsji *nV-*, Marringarr *nV-*, Miriwung *na-rr(V)-*, Murrinh-patha *nV-*, Na-kara *nu-na-* (UA), *nu-rr(a)-* (FUA), *nu-rrpa-* (A), Ndjebbana *ni/a-rri-* (NFUA), *na-rra- -nya* (FUA), *na-rru-* (A), Ngalakgan *nu-rru-*, Ngandi *na-rri-* (MUA), *na-rr-* (A), Nunggubuyu *nii-ni-* (MUA), *nii-ngi-* (FUA), Rembarrnga *na-rra-*, Wardaman *nu-* [16 languages]

Table 18: * *kV-* prefix forms

Type	Function	Attestation
bound prefixes	1+2min	Ndjebbana *ka(ko)-* [1 language]
	1+2aug	Gundjeihmi *ka-rri-*, Kungarakany *ku-rr-*, Limilngan *ka-rr-* [3 languages]
	2min	Gunin *k(V)-*, Kunbarlang *ki-* [2 languages]
	2aug	Bardi *ku-*TNS*-rr-*, Bunuba *ngku-rr-* ~ *ku-rr-* ~ *u-rr-*, Gooniyandi *ngki-rr-*, Gundjeihmi *k/ngu-ni-* (UA), *k/ngu-rri-* (A), Gunin *ki-rr-*, Iwaidja *ku-rru-K-*, Jaminjung *ku-nyi-* (UA), *ku-rri-* (A), Larrikiya *ku-rri-*, Maung *ku-rr-*, Nyigina *ku-rr-*, Ungarinyin *ku-rr-*, Warrgat *ka-rra-*, Yawuru *ku-*TNS*-rr-* [13 languages]

The criterion of functional extension, on the other hand, clearly favours the reconstruction of **nV-* as an older form. This prefix is a segmentable form in the 2aug free pronouns of six languages, which do not show reflexes of **nV-* as a 2 augmented prefix.

(22) Gunin *ni-rra* ~ *ni-rru*, Ngan'gityemerri *na-rrku* ~ *na-karri* (UA), *na-kurr* (A), Ungarinyin *nu-rr-un*, Tiwi *nu-wa*, Warray *ni-kirring*, Warrgat *ni-ca*

There is also the Maung 2aug form *nuwu-rri*, and the Patjtjamalh 2aug form *nawa-rra*. There are no languages which have 2Aug free pronouns involving **ku-*, which do not also have **ku-* as their 2aug prefix. Blake (1988:12) interprets this as evidence favouring the reconstruction of **ku-* as the older form, given that bound forms derive from free forms. I have argued that the reverse relationship commonly holds between free and bound pronominals among the non-Pama-Nyungan languages, particularly in the augmented category (§1), and consequently this is evidence that **nV-* is the older form.

There is other evidence from functional extension which supports this analysis. There are only two languages which have reflexes of **ku-* as their 2min form: Gunin and Kunbarlang. Gunin has reflexes of **ku-* as its 2aug prefix, but Kunbarlang does not. There are nine languages which have reflexes of **nV-* as a 2min prefix. Five of these do not have reflexes of **nV-* as their 2aug prefix: Jaminjung, Larrikiya, Limilngan, Malak-Malak and Warrgat. Given that the 2min reflexes can be derived from 2aug proto-forms, but not vice versa, the more extensive appearance of **nV-* as a minimal prefix is evidence that it is an older form.

In overall terms, therefore, both **ku-* and **nV-* appear to be of considerable antiquity as prefixes for the 2aug category. There is no clear evidence from prefixal systems for a reconstruction of one or the other as older. Further, there is no clear evidence from prefixal systems as to the way in which they were originally distinguished.

4.5 The minimal non-past **ka-* 3

A number of languages show reflexes of a **ka-* Non-Past prefix in the 3min category.

(23) Gun-djeihmi *ka-* (NP), Kungarakany *ka-* (NP), Jaminjung *ka-*, Jawoyn *ka-* (NP), Kamu *Ø-* ~ p/*ku-*, Marra *wa-* (post-continuant), *ka-* (post-plosive), Marramaninjsji *kV-*, Marringarr *kV-*, Marrithiyel *kV-*, Matngele *Ø-* ~ *p/ku-*, Miriwung *k(V)-* (M), Na-kara *ki-* (F), Ndjebbana *ka-* (NF), Rembarrnga *ka-* (NP), Wagiman *ka-* (NP), Warndarrang *(k)a-*, Warray *ka-* (NP) [Forms not marked NP 'Non-Past' are not restricted by tense/realis status]

Like the **ku-* '2aug' prefix, there is a strong frequency argument for reconstructing a particular vowel with this prefix.

(24) **ka-*: *a* (10 languages), *V* (3 languages), *u* (2 languages), *i* (1 language)

There are three languages with 3 minimal prefix forms which are probably lenited reflexes of **ka-*.

(25) Nungali *wa-*, Nyigina *yi-* ~ *wa-*, Yawuru *wa-*

As indicated, not all reflexes of the **ka-* prefix are restricted by tense/realis status. However, in a number of languages, reflexes of the **ka-* prefix are limited to a non-Past meaning. This prefix also appears as a non-Past marker in the 3aug category in a some of these languages: Gun-djeihmi, Jawoyn, Wagiman, and Warray. I reconstruct the non-Past meaning as the original meaning for this prefix. Given that 3min Subjects are commonly cross-referenced by *Ø-*, it is easy to see how a non-Past prefix **ka-* could develop into a Subject prefix for the 3min category generally. The converse development, from a Subject prefix into a tense prefix, is not otherwise attested. Such a development is inherently unlikely, given that pronominal cross-reference has a narrower scope than tense.

4.6 The masculine class marker **na-*

Most nonPN languages have nominal classification systems which are indicated by prefixes to various categories of nominals. In some languages, the class prefixes also appear in verbal constructions, cross-referencing 3min entities. Class prefixation is generally outside the scope of this paper, unless it also appears in verbal cross-reference. However, there is one case where a class prefix and a pronominal prefix are very similar in form: **nV-* '2aug' and **na-* 'Masculine'. It is desirable to reconstruct **na-*, in order to illustrate the differences between the two proto-prefixes.

Table 19: ** na-* prefix forms

Type	Function	Attestation
noun class bound prefixes	Masc	Alawa *na-*, Gaagudju *na-*, Jawoyn *na-*, Kunbarlang *na-*, Larrikiya *n(i)-* (kin nouns only), Limilngan *n-* (kin nouns only), Mangarrayi *na-* (Masculine and neuter), Marra *na-* (Oblique case), BGW *na-*, Ngalakgan *nu-*, Ngandi *ni-*, Nunggubuyu *na*, Rembarrnga *na-* (clan names only), Wagiman *nu-*, Warndarrang *na-*, Warray *a*

verbal bound prefixes	3 masc min	Alawa *na-*, Ngandi *ni-*, Nunggubuyu *ni-* [3 languages]
	3 fem min	Malak-malak *nV(n)-*, Ngandi *na-* [2 languages]

As illustrated in Table 19, **na-* is much more extensively reflexed as a class marker than as a verbal prefix. Unlike **nV-* '2aug', there is an evident frequency argument for the reconstruction of a particular vowel, in the case of the class prefix, the reconstructed vowel is **a*.

5 The proto-prefix paradigm

The paradigm that is most immediately ancestral to the paradigms found in the various non-Pama-Nyungan languages is set out in Table 20.

Table 20: The prefix paradigm most immediately ancestral to those of nonPN languages

	min	aug
1	**nga-*	**yV-rrV-*, **nyV-rrV-*
1+2	**mV-*	**ngV-rrV-*
2	**cV-*	**nV-rrV-*, **ku-rrV-*
3	**ka-* (NP), *Ø-*	**pV-rrV-*

This reconstruction is incomplete in the 3min. There is no consistent evidence as to the marking of this category in the Past tense, nor as to whether and if so how, a distinction between masculine and feminine was marked. If the hypothesis that the **yV-rrV-* and **nyV-rrV-* forms are phonologically related is correct, then the paradigm can be reconstructed as that in Table 21.

Table 21: Completed paradigm reconstruction assuming phonological relatedness of **yV-rrV-* and **nyV-rrV-*

	min	aug
1	**nga-*	**nyV-rrV-*
1+2	**mV-*	**ngV-rrV-*
2	**cV-*	**nV-rrV-*, **ku-rrV-*
3	**ka-* (NP), *Ø-*	**pV-rrV-*

As previously stated, it is not generally possible to reconstruct the free pronoun paradigm, from which this prefix paradigm is presumably ultimately derived. The one well-supported exception is in the 1min, where a free pronoun **ngayu* is reconstructable.

6 Reconstruction of free pronouns

6.1 The 1min free pronoun **ngayu*

Blake reconstructs **ngay* as the pronoun in this category, and this form is found in three languages.

(26) Burarra *ngay-ppa*, Murrinh-patha *ngay*, Ngalakgan *ngay-kkaq*

However, a much larger number of languages have a form with a final vowel.

(27) Bardi *ngayu*, Gaagudju *ngaayi*, Gun-djeihmi *ngaye*, Gunin *ngaya*, Gurr-goni *ngayi*, Jingulu *ngaya*, Kunbarlang *ngayi*, Mangarrayi *ngaya*, Miriwung *ngayu*, Ndjebbana *ngaya-ppa*, Ngandi *ngaya*, Ngan'gityemerri *ngayi*, Nunggubuyu *ngaya*, Nyigina *ngayu*, Tiwi *ngiya*, Worora *ngayu*, Yawuru *ngayu*

Given that epenthesis is not generally characteristic of the non-Pama-Nyungan languages, the final vowel is to be reconstructed. The three forms in (26) reflect a sporadic loss of an unstressed vowel. There is considerable variation in the quality of this vowel. General phonological considerations favour /u/. The front vowel forms in /i/ and /e/ could be assimilations to the preceding /y/. The low vowel forms in /a/ could reflect vowel harmony to the preceding, stressed /a/. No equivalent explanations can be provided for the /u/ forms. There is also the Wambaya 1min form *ngawu*, which would derive from **ngayu* by assimilation of **y > w/_u*. Consequently, I reconstruct a final /u/ vowel.

In addition to the forms in (26) and (27), there are also the forms in (28).

(28) Bunuba *ngayini*, Jaminjung *ngayuk*, Gija *ngayin*, Limilngan *ngaykki*, Nungali *ngayuk*, Wardaman *ngayuku*

These forms may involve reflexes of **ngayu*. However, they all involve additional final segments which are not synchronically analysable in their respective languages. Given the frequency with which free pronouns are suffixed with 'emphatic' or 'contrastive topic' suffixes, it is possible that these additional final segments were historically distinct morphemes.

6.2 The 2min free pronoun **nginy*

Blake reconstructs **nginy* as the 2min free pronoun. Free pronouns and prefixes involving this form are found in a number of languages.

Table 22: **nginy* forms

Type	Function	Attestation
bound prefixes	2min	Jawoyn *nginy*, Ngalakgan *nginy-caq*, Rembarrnga *nginy-karnœq* (emphatic), Umbugarla *nginy*, Uwinymil *iny-ge/o*, Warray *nguny*
free pronouns	2min	Jawoyn *nginy-*, Limilngan *nginy-*, Ngalakgan *nginy-*, Rembarrnga *nginy-*, Uwinymil *iny-*

There are also the free pronoun forms in (29), which involve a final vowel.

(29) **nginyV* : Burarra *nginyi-ppa*, Gaagudju *ngiinya*, Kungarakany *nginya-*, Limilngan *nginyi*

If the forms in (29) are related to the forms in Table 22, then there are no factors which would determine whether the reconstruction should be **nginy*, without a final vowel, or **nginyV*, with a final vowel. Therefore the reconstruction would have to be **nginy(V)*. In addition to the forms in Table 22 and (29), there are also those in (30) to be considered.

(30) **nginycV* : Bunuba *nginyci*, Gooniyandi *nginyci*, Tiwi *nginyca*, Worora *nguncu*

These forms involve an additional *cV* syllable. These *nginycV* forms cannot be related phonologically to the **nginy(V)* forms. Apocope is not characteristic of the GN languages: Jawoyn, Ngalakgan, Rembarrnga, Warray (Harvey this volume, Chapter 8). Consequently, the *ngVny* forms in these languages cannot be systematically derived through a set of changes such as **nginycV* > **nginyc* > *nginy*.

The most likely way of establishing a relationship would be to provide a plausible source for the *cV* syllable from within the free pronoun paradigms of the languages in (30). However, this syllable has no obvious provenance within the free pronoun paradigms of these languages. We may compare the forms in (30) with the Ngalakgan form *nginy-caq*, where the *-caq* syllable has an evident provenance. The Ngalakgan free pronouns involve a pronominal base *-kkaq*. Ngalakgan, like most northern languages, does not allow post-nasal geminates. Consequently, **nginy* + *-kkaq* would have reduced to **nginy-kaq*, which then underwent place assimilation to produce the attested form *nginy-caq*.

In addition to the forms with an initial dorsal nasal, there are also forms with initial laminal nasals which could be related, given that a change of $*_{wd}[ngi > {}_{wd}[nyi$ is well-motivated.

(31) Ndjebbana *nyinyca-ppa*, Ngan'gityemerri *nyinyi*, Warndarrang *nyinyu*

However, there is presently no evidence for $*_{wd}[ngi > {}_{wd}[nyi$ as a systematic sound change in these languages.

In overall terms, therefore, there are a number of 2min free pronoun forms which might derive from a proto-pronoun with an initial, or sole, **nginy* syllable. However, this putative proto-pronoun is not consistently reflexed, in the way that **ngayu* '1min' is comparatively consistently reflexed. Therefore, the **nginy* 2min form can be reconstructed as no more than a possibility, to be resolved by further research.

7 Conclusion

I have argued in this paper that the evident similarities in pronominal forms among the non-Pama-Nyungan languages are chiefly to be accounted for by a reconstruction of a paradigm of pronominal prefixes. Under this reconstruction, the vocalic variability which characterises these evident similarities follows in a well-motivated manner. I have also argued that pronominal reconstruction must take account of continuing paradigmatic instability caused by recategorisation and remodelling, focusing on levels of person and number classing. These recategorisations and remodellings particularly affect the non-singular categories in persons other than the third person.

The reconstruction of a paradigm of prefixes rather than a paradigm of free pronouns has significant implications for the kinds of historical relationships that may be reconstructed between bound and free pronominals. The standard view of the relationship between bound and free pronominals is set by Heath (1978:108).

> The directions of analogical influence posited here, independent > bound and simple > derived, are the primary directions of change in historical linguistics. The historical development of pronominal systems (for example Romance, Uto-Aztecan) can be seen as a constant process of creating or reshaping bound pronominals on the analogy of independent pronouns ... There is very little analogical development in the other direction, whereby independent pronouns are analogically reshaped on the basis of patterns derived from bound pronominal systems.

Heath is undoubtedly correct in saying that most bound pronominals derive ultimately from free pronouns. Nichols (1986:87–88) agrees with Heath's analysis on this point: 'pieces of verbal morphology may go back etymologically to elements of nominal morphology, but not vice versa ... if a piece of verbal morphology in one language is clearly cognate to a piece of nominal morphology in another, we will reconstruct the nominal function for the proto-language — in the absence of compelling evidence to the contrary'.

This paper has shown that independent > bound is not the only relationship that can hold historically between bound and free pronominals. Among languages with long-established cross-reference systems, bound > independent relationships are possible. The two directions of relationship are not, however, simple converses of one another. The independent > bound relationship generally involves the reduction of longer unanalysable free forms to shorter bound forms. The bound > independent forms involves the affixation of bound forms to base, which is the root part of the overall free pronoun thereby created.

The reconstruction of a set of proto-prefixes for a proto-language ancestral to most if not all the non-Pama-Nyungan languages obviously has implications for historical linguistics more generally in Australia. Dixon (1980:225–227) proposes that the Pama-Nyungan languages are historically conservative and that the non-Pama-Nyungan languages have undergone extensive change as the result of the development of bound pronominal systems. This hypothesis is challenged by Blake (1988:45–46), Evans (1988:92–95), Evans and Jones (1997) and Evans and McConvell (1998), who suggest that the Pama-Nyungan languages may be innovatory in one or more respects. Whichever of these two hypotheses should prove to be correct, it is the case that the development of bound pronominals is of some considerable time-depth and any typological changes attendant on this development are also of some considerable time depth.

Appendix: Paradigms of intransitive subject prefixes and basic free pronouns in nonPN

Two tables follow. Table A1 contains the 1 and 1+2 form, Table A2 the 2 and 3 form of intransitive subject prefixes and basic free pronouns in nonPN.

Table A1: 1 and 1+2 forms of intransitive subject prefixes and basic free pronouns in nonPN

	1 Minimal	1UA	1A	1+2MIN	1+2UA	1+2A
Alawa Pre	*nga-*	*ngu-rr-*	*ngu-l-*	*nya-*	*nyu-l-*	*nyu-l-*
Alawa Pro	*ngina*	*nga-rru*	*nga-lu*	*nyanu*	*nya-lu*	*nya-lu*
Bardi Pre	*nga-*	*a*-TNS-*rr-*	*a*-TNS-*rr-*	*a-*	*a*-TNS-*rr-*	*a*-TNS-*rr-*
Bardi Pro	*ngayu*	*arrudu*	*arrudu*	*ayu*	*arridil*	*arridil*
Bunuba Pre	*ng-* ~ *l-*	*yiyi-rr-* (C_) *jiyi-rr-*	*yiyi-rr-* (C_) *jiyi-rr-*	*yiyi-rr-* (C_) *jiyi-rr-*	*ya-rr-* (C_) *ja-rr-*	*ya-rr-* (C_) *ja-rr-*
Bunuba Pro	*ngayini*	*ngiyi-rri*	*ngiyi-rri*	*ngiyi-rri*	*yaa-rri*	*yaa-rri*
Burara Pref	*ngu-*	*nyi-rri-*	*nyi-bu-rr-*	*a-rr-*	*a-rri-*	*ngu-bu-rr-*
Burara Pron	*ngay-pa*	*nga-ti-pa* (NF) *nga-rriny-ji-pa* (F)	*ngayburr-pa*	*nga-rri-pa*	*nga-ti-pa* (NF) *nga-rriny-ji-pa* (F)	*ngayburr-pa*
Gaagudju Pref	*arr(a)-*			*marra-*		
Gaagudju Pron	*ngaayi*	*ngaa-*	*ngaa-*	*ma'neerra*	*ma'naa-*	*ma'naa-*
Gooniyandi Pref	*li-*	*ji-rr-*	*ji-rr-*	*ji-rr-*	*ja-rr-*	*ja-rr-*
Gooniyandi Pron	*nganyi*	*ngidi*	*ngidi*	*ngidi*	*yaadi*	*yaadi*
Gun-djeihmi Pre	*nga-*	*nga-ni-*	*nga-rri-*	*ngarr-*	*ngarr-*	*ga-rri-*
Gun-djeihmi Direct	*ngaye*	*ngat*	*ngat*	*ngat*	*ngat*	*ngat*
Gun-djeihmi Poss.	*ngarduk*	*nga-rri-woneng*	*ngat-berre*	*ngarrgu*	*ga-rri-woneng*	*gat-berre*
Kungarakany Pre	*arr-*	*ngi-rr-*	*ngi-rr-*	*ma-*	*gu-rr-*	*gu-rr-*
Kungarakany Pro	*ngirr-*	*ngi-rri-cirr*	*ngi-rri-cirr*	*ngama-*	*ngogo-cirr*	*ngogo-cirr*
Gunin Pre	*ng*(V)-	*nya-rr-*	*nya-rr-*	*nga-rr-*	*nga-rr-*	*nga-rr-*
Gunin Pro	*ngaya*	*nyarra* ~ *nyarru*	*nyarra* ~ *nyarru*	*nangarra*	*nangarra*	*nangarra*
Gurr-goni Pre	*ngu-*	*nyi-ni-* (NFUA) *nyi-rrinyin-* (FUA)	*nyi-burr-*	*arr-*	*a-ni-* (NFUA) *a-rrinyin-* (FUA)	*ngu-burr-*
Gurr-goni Pro	*ngayi*	*nga*-CLASS-*yu*	*nga-ycbu-rru*	*ngarr(ic)*	*nga*-CLASS-*yu*	*nga-ycbu-rru*
Iwaidja Pre	*nga-*	*nga-rru-K-*	*nga-rru-K-*	*a-rru-K-*	*a-rru-K-*	*a-rru-K-*
Iwaidja Pro	*ngabi*	*ngabi-li-janad*	*nga-rru-rri*	*nuyi-ngabi*	*nga-rri*	*nga-rri*
Jaminjung Pre	*nga-*	*yi-nyi-*	*yi-rri-*	*mindi-*	*yu-rri-*	*yu-rri-*
Jaminjung Pro	*ngayug*	*yi-rri-nyi*	*yi-rri*	*mindi*	*yu-rri*	*yu-rri*
Jawoyn Pre	*nga-*	*nyi-rri-*	*nyi-rri-*	*nyi-*	*nya-*	*nya-*

	1 Minimal	1UA	1A	1+2MIN	1+2UA	1+2A
Jawoyn Pro	*ngarrk*	*nyi-rrang*	*nyi-rrang*	*nyi-yarrk*	*nya-rrang*	*nya-rrang*
Kamu Pre	*a-*	*a-rru-*	*a-rru-*	*am(bu)-*	*a-rru-*	*a-rru-*
Kamu Pro	*nguru*	*ngerru*	*ngerru*	*ngemu*	*ngerru*	*ngerru*
Kayardild Pro	*ngada*	*nga-rra-*	*nga-l-da*	*nga-gu-rra*	*nga-gu-l-da*	*nga-gu-lda*
Kija Pre	*ngV-*	*yi-rrV-*	*yi-rrV-*	*yV-*	*yV-*	*yV-*
Kija Pro	*ngayin*	*ya-rre-ben*	*ya-rre-ben*	*yayin*	*yuwurrun*	*yuwurrun*
Kunbarlang Pre	*nga-*	*nga-na-*	*nga-tta-*	*nga-rrki-*	*nga-rrki-*	*nga-rrki*
Kunbarlang Pro	*ngayi*	*nganangka*	*ngarrka*	*nganangka*	*ngarrka*	*ngarrka*
Larrikiya Pre	*nga-*	*nga-rri-*	*nga-rri-*	*mu-*	*da-rri-*	*da-rri-*
Larrikiya Pro	*ngananga*	*ngarrangarra*	*ngarrangarra*	*manmiya*	*darrandarra*	*darrandarra*
Limilngan Pre	*nga-*	*nga-rr-*	*nga-rr-*	*mi-*	*ga-rr-*	*ga-rr-*
Limilngan Pro	*ngayki*	*nguyi*	*nguyi*	*ngami*	*guyi*	*guyi*
Malak-malak Pre	*a/e-*	*a/e(-rrV)-*	*a/e(-rrV)-*	*a/enggV-*	*a/err(gV)-*	*a/err(gV)-*
Malak-malak Pro	*nga*	*yewöt*	*yewöt*	*yenggi*	*yerrgit*	*yerrgit*
Mangarrayi Pref	*nga-*	*ngi-rr-*	*ngi-rla-*	*ngi-*	*nga-rr-*	*nga-rla-*
Mangarrayi Pron	*ngaya*	*ngi-rr*	*ngi-rla*	*ngi*	*nga-rr*	*nga-rla*
Marra Pre	*nga-*	*ni-rri-*	*ni-wi-*	*na-*	*na-wu-*	*na-wu-*
Marra Pro	*ngina-rra*	*ni-rri-nya*	*ni-rr-wi-nya*	*naga-rra*	*na-rr-wu-nya*	*na-rr-wu-nya*
Marramaninjsji Pre	*g/ngV-*	*g/ngV-(rri-)*	*g/ngV-(rri-)*	*g/ngVmbV-*	*g/ngVmbV-*	*g/ngVmbV-*
Marramaninjsji Pro	*yigin*	*ge-di-ji*	*ge-di*	*nganggi*	*nganggi-winyim ~ -ninim*	*nganggi-winyim ~ -ninim*
Marringarr Pre	*ngV-*	*gV-(rri-) ~ ngV-(rri-)*	*gV-(rri-) ~ ngV-(rri-)*	*gVmbu- ~ ngVmbu-*	*gVmbu- ~ ngVmbu-*	*gVmbu- ~ ngVmbu-*
Marringarr Pro	*yin*	*ga-di*	*sje-rr*	*ganggi*	*ganggi-nim*	*ganggi-nim*
Marrithiyel Pre	*ngV-*	*g/ngirri-*	*g/ngirri-*	*g/ngVmbV-*	*g/ngirri-*	*g/ngirri-*
Marrithiyel Pro	*yigin*	*ga-di*	*ga-di*	*nganggi*	*ga-di*	*ga-di*
Matngele Pre	*a-*	*a-rru-*	*a-rru-*	*am(bu)-*	*a-rru-*	*a-rru-*
Matngele Pro	*nguru*	*ngerru*	*ngerru*	*ngemu*	*ngerru*	*ngerru*
Maung Pre	*nga-*	*nga-rr-*	*nga-rr-*	*arrg-*	*arrg-*	*arrg-*
Maung Pro	*ngabi*	*nga-rri*	*nga-rri*	*ngarrwurri*	*ngarrwurri*	*ngarrwurri*

	1 Minimal	1UA	1A	1+2MIN	1+2UA	1+2A
Miriwung Pre	*nga*(*n*V)-	*yi-rr*(V)-	*yi-rr*(V)-	*y*V- ~ *ya-rru*-	*y*V- ~ *ya-rru*-	*y*V- ~ *ya-rru*-
Miriwung Pro	*ngayu*	*ya-rru-bu*	*ya-rru* ~ *yuwu-rru*	*yayi-bu*	*yayi* ~*yuwu-rru*	*yayi* ~*yuwu-rru*
Murrinh-patha Pre	*ng*V-	*ng*V-	*ng*V-	*p*V- ~ *th*V-	*p*V- ~ *th*V-	*p*V- ~ *th*V-
Murrinh-patha Pro	*ngay*	*nga-nku*	*nga-nki*	*neki*	*neki*	*neki*
Na-kara Pre	*nga-*	*ngi-na-* (M) *ngi-rr*(*a*)- (F)	*ngi-rrba-*	*rra-*	*ngu-na-* (M) *ngu-rr*(*a*)- (F)	*ngu-rrba-*
Na-kara Pro	*ngarra-pa*	*ngi-naya-pa* (M) *nga-ngiyaga-pa* (F)	*ngi-perra-pa*	*ngarra-pa*	*ngu-naya-pa* (M) *nga-nguyaga-pa* (F)	*ngu-perra-pa*
Ndjebbana Pref	*nga-*	*nyi/a-rri-* (NF) *nya-rra-* *-nya* (F)	*nya-rru-*	*ga*(*go*)-	*ngi/a-rri-* (NF) *ngabarru*(*ga*)- *-nya* (F)	*ngaba-rru/a-*
Ndjebbana Pron	*ngaya-pa*	*nyi-rri-ge-pa* (M) *nya-rra-ya-pa* *-nya* (F)	*nyi-rra-pa*	*nga-rra-pa*	*ngi-rri-ge-pa* (M) *nga-rra-ya-pa* *-nya* (F)	*ngu-rra-pa*
Ngalakan Pre	*ngu-*	*yi-rri-*	*yi-rri-*	*yi-*	*ngu-rru-*	*ngu-rru-*
Ngalakan Pro	*ngay-kaq*	*yi-rr-kaq*	*yi-rr-kaq*	*yi-kaq*	*ngu-rr-kaq*	*ngu-rr-kaq*
Ngaliwurru Pre	*nga-*	*yi-ny-*	*yi-rr-*	*mind-*	*yi-rr-*	*yi-rr-*
Ngaliwurru Pro	*ngayug*	*yi-rri-nyi*	*yi-rri*	*mindi*	*yi-rri*	*yi-rri*
Ngandi Pre	*nga-*	*nya-rri* (M)	*nya-rr-*	*nya-*	*nga-rri-* (M)	*nga-rr-*
Ngandi Pro	*ngaya*	*nyowo-rni* (M)	*nyerr*	*nyaka*	*ngorrko-rni* (M)	*ngorrkorr*
Ngan.gityemerri Pre	*ng*V-	*ng*V-*d*/*rr*(V)-	*ng*V-*d*/*rr*(V)-	*ng*VNSV-	*ng*VNSV-	*ng*VNSV-
Ngan.gityemerri Pro	*ngayi*	*nga-rrgu* ~ *nga-garri*	*nga-gurr*	*nayin*	*nayin-nime*	*nayin-nime*
Nungali Pre	*nga-*	*yi-ny-*	*yi-rr-*	*bidi-*	*yu-rr-*	*yu-rr-*
Nungali Pro	*ngayug*	*yi-nygi-yirram*	*yi-rri-mulu*	*bidi-yirram*	*yu-rru-mulu*	*yu-rru-mulu*
Nunggubuyu Pre	*nga-*	*nii-ni-* (M) *nii-ngi* (F)	*nu-rru-*	*na-*	*ngii-ni-* (M) *ngii-ngi-* (F)	*ngu-rru-*
Nunggubuyu Pro	*ngaya*	*ni-rni* (M) *ni-rngi* (F)	*nu-rru*	*na-ga-waa*	*nga-gu-rni* (M) *nga-gu-rngi* (F)	*nga-gu-rru*
Nyigina Pre	*nga-*	*ya*-TNS-*rr*-	*ya*-TNS-*rr*-	*ya-*	*ya*-TNS-*rr*-	*ya*-TNS-*rr*-
Nyigina Pro	*ngayu*	*ya-rr-ga-mirri*	*ya-rr-ga*	*yayu*	*ya-rr-ju-mirri*	*ya-rr-ju*

	1 Minimal	1UA	1A	1+2MIN	1+2UA	1+2A
Patjtjamalh Pre	*nga-*	*nga-rra-*	*nga-rr-*	*ngangga-*	*nga-rra-*	*nga-rra-*
Patjtjamalh Pro	*ngace*	*nga-rra*	*nga-rra*	*ngangga*	*nga-rra*	*nga-rra-rra*
Rembarrnga Pre	*nga-*	*ya-rra-*	*ya-rra-*	*ya-*	*nga-rra-*	*nga-rra-*
Rembarrnga Pro	*ngi-nda*	*ya-nda-parraq*	*ya-nda*	*yi-nda-parraq* ~ *yi-rra-parraq*	*nga-gunda-parraq*	*nga-gunda*
Rembarrnga Dat Pro	*ngœnœ*	*ya-rr-parraq*	*ya-rr-œ*	*yœkœ*	*ngago-rr-parraq*	*ngago-rr-œ*
Tiwi Pre	*ngi-(rri-)*	*ngi-ndi-*	*ngi-ndi-*	*mu-(rri-)*	*nga-(rri-)*	*nga-(rri-)*
Tiwi Pro	*ngiya*	*ngawa*	*ngawa*	*muwa*	*ngawa*	*ngawa*
Ungarinyin Pre	*nga-*	*nya-rr-*	*nya-rr-*	*nga-rr-*	*nga-rr-*	*nga-rr-*
Ungarinyin Pro	*ngin*	*nya-rr-un*	*nya-rr-un*	*nga-rr-un*	*nga-rr-un*	*nga-rr-un*
Wagiman Pre	*nga-*		*ngi-*	*ngin-*		*ngi-*
Wagiman Pro	*ngagun*		*ngego*	*nginyang*		*ngego*
Wardaman Pre	*nga-*	*yi-rr-*	*yi-rr-*	*nga-yi-*	*nga-rr-*	*nga-rr-*
Wardaman Pro	*ngayugu*	*yirrug(-guya)*	*yirrug*	*yawung-guya*	*ngarrug*	*ngarrug*
Warndarrang Pre	*nga-*	*nyi-rr(i)d-*	*nyi-di-*	*nya-* (_C) *nyany-* (_V)	*nga-la-*	*nga-la-*
Warndarrang Pro	*nginga*	*nyi-rra-yi*	*nyi-d-burr*	*nyanya*	*ngala*	*ngala*
Warray Pre	*at-*	*i-*	*i-*	*ma-*	*i-*	*i-*
Warray Pro	*ngek*	*yi-kirring*	*yi-kirring*	*nyama*	*yebe*	*yebe*
Warrgat Pre	*nga-*	*nga-rr*V-	*nga-rr*V-	*m*V-	*nga-ma-* ~ *ga-rrga-*	*nga-ma-* ~ *ga-rrga-*
Warrgat Pro	*ngany*	*nga-ja-mada*	*nga-ja*	*nganggu*	*gi-ja*	*gi-ja*
Worora Pre	*nga-*	*a-rr-*	*a-rr-*	*nga-rr-*	*nga-rr-*	*nga-rr-*
Worora Pro	*ngayu*	*a-rre-rnrdu*	*a-rri*	*nga-rre-rnrdu*	*nga-rri-nggurri*	*nga-rri*
Yawuru Pre	*nga-*	*ya*-TNS-*rr-*	*ya*-TNS-*rr*	*ya-*	*ya*-TNS-*rr-*	*ya*-TNS-*rr-*
Yawuru Pro	*ngayu*	*ya-rr-garda*	*ya-rr-yirr*	*yayu*	*yadirri(gurdirri)*	*yadirri*
Yukulta Pro	*ngada*	*nga-rra*	*nga-l-da*	*nga-gu-rra*	*nga-gu-l-da*	*nga-gu-lda*

Table A2: 2 and 3 forms of intransitive subject prefixes and basic free pronouns in nonPN

	2MIN	2UA	2A	3MIN	3UA	3A
Alawa Pre	*yi-*	*wu-rr-*	*wu-l-*	*na-* (M), *arr-* (F)	*yi-rr-*	*yi-l-*
Alawa Pro	*nyagana*	*wu-rru-*	*wu-lu*	*nu-rla* (M) *ngadu-rla* (F)	*yi-rru-rla* ~ *yu-rru-rla*	*yi-lu-rla* ~ *yu-lu-rla*
Bardi Pre	*mi-*	*gu*-TNS-*rr-*	*gu*-TNS-*rr-*	*i-*	*i*-TNS-*rr-*	*i*-TNS-*rr-*
Bardi Pro	*ju*	*gu-rr*	*gu-rr*	*ginying*	*i-rr*	*i-rr*
Bunuba Pre	*ngg-* ~ *ginggy-* ~ *j-* ~ *ny-*	*nggu-rr-* ~ *gu-rr-* ~ *u-rr-*	*nggu-rr-* ~ *gu-rr-* ~ *u-rr-*	Ø-	*wu-rr-* (C_) *bu-rr-*	*wu-rr-* (C_) *bu-rr-*
Bunuba Pro	*nginji*	*yinggi-rri*	*yinggi-rri*	*niy*	*biyi-rri*	*biyi-rri*
Burara Pref	*nyi-*	*nyi-rri-*	*nyi-bu-rr-*	*a-* ~ Ø-	*(a)bi-rr-*	*a-bu-rr-*
Burara Pron	*nginyi-pa*	*ana-go-ti-pa* (NF) *ana-go-rriny-ji-pa* (F)	*ana-goyburr-pa*	*ni-pa*	*bi-ti-pa* (NF) *bi-rriny-ji-pa* (F)	*bi-rri-pa*
Gaagudju Pref	*nyi*N-			Ø- (M), *nyi*N- (F)		
Gaagudju Pron	*ngiinya*	*ngi'nyaa-*	*ngi'nyaa-*	*naawu* (M) *ngaayu* (F)	*no'woo-* (M) *ngo'yoo-* (F)	*no'woo-*
Gooniyandi Pref	*ji-*	*nggi-rr-*	*nggi-rr-*	Ø-	*bi-rr-* ~ *rri-*	*bi-rr-* ~ *rri-*
Gooniyandi Pron	*nginyji*	*gidi*	*gidi*	*niyi*	*bidi*	*bidi*
Gun-djeihmi Pre	*yi-*	*g/ngu-ni-*	*g/ngu-rri-*	*ba-*, *ga-* (NP)	*ba-ni-*	*ba-rri-*
Gun-djeihmi Direct	*g/w/ngutta*		*g/w/ngutta*	*nungga* (M) *ngaleng* (F)		*betta*
Gun-djeihmi Possessive	*ngutanggi*	*ngu-rri-woneng* *gu-rru-woneng*	*g/ngut-berre*	*nuye* (M) *ngarre* (F)	*be-rre-woneng*	*bet-berre*
Kungarakany Pre	*ngi-*	*ni-rr-*	*ni-rr-*	Ø-, *ga-* (NP)	*bi-rr-*	*bi-rr-*
Kungarakany Pro	*nginya-*	*ni-rri-cirr*	*ni-rri-cirr*	*ginyba-*	*bi-rri-cirr*	*bi-rri-cirr*
Gunin Pre	*g*(V)-	*gi-rr-*	*gi-rr-*	*b*(V)-	*bi-rr(a)-*	*bi-rr(a)-*
Gunin Pro	*naa*	*nirra* ~ *nirru*	*nirra* ~ *nirru*	*bini*	*birreni*	*birreni*
Gurr-goni Pre	*nyin-*	*nyi-ni-* (NFUA) *nyi-rrinyin-* (FUA)	*nyi-burr-*	*a-* (M) *jin-* (F)	*abu-ni-* (NFUA) *abu-rrinyin-* (FUA)	*a-burrrr-*
Gurr-goni Pro	*ngarr*	*nugo*-CLASS-*yu*	*nugo-ycbu-rru*	*niye* (NF) *ngijiye* (F)	*bo*-CLASS-*yu*	*bo-rr(o)*

	2MIN	2UA	2A	3MIN	3UA	3A
Iwaidja Pre	*ang-*	*gu-rru-K-*	*gu-rru-K-*	*K-*	*a-*	*a-*
Iwaidja Pro	*nuyi*	*nuyi-li-janad*	*nuwu-rri*	*yanad*	*wanad*	*wanad*
Jaminjung Pre	*na-*	*gu-nyi-*	*gu-rri-*	*ga-*	*bu-nyi-*	*bu-rri-*
Jaminjung Pro	*nami*	*gu-rri-nyi*	*gu-rri*	*ji*	*bu-rri-nyi*	*bu-rri*
Jawoyn Pre	*nginy-*	*nu-*	*nu-*	*Ø-, ga-* (NP)	*bu-*	*bu-*
Jawoyn Pro	*nginy*	*nu-rrang*	*nu-rrang*	*ngayu*	*bu-rrang*	*bu-rrang*
Kamu Pre	*any(ju)-*	*nunggu-rru-*	*nunggu-rru-*	*Ø- ~ b/gu-*	*b/gu-rru-*	*b/gu-rru-*
Kamu Pro	*nunggurr*	*nunggurr*	*nunggurr*	*gurna*	*gurna(wurr)*	*gurna(wurr)*
Kayardild Pro	*nyingga*	*gi-rra*	*gi-l-da*	*niya*	*bi-rra*	*bi-l-da*
Kija Pre	*na-*	*na-rrV-*	*na-rrV-*	*ngi-* (M),*nyi-* (F)	*bV-rrV-*	*bV-rrV-*
Kija Pro	*nyengen*	*nenggerreben*	*nenggerreben*	*uıawun* (M) *ngal* (F)	*burru*	*burru*
Kunbarlang Pre	*gi-*	*ngu-nu-*	*ngu-ttu-*	*ga-*	*ga-ba-rra-*	*ba-tta-*
Kunbarlang Pro	*nguda*	*nungutbe*	*nungutbe*	*nuga* (M), *giga* (F)		
Larrikiya Pre	*ni-*	*gu-rri-*	*gu-rri-*	*bi-*	*bi-rri-*	*bi-rri-*
Larrikiya Pro	*iccana*	*gurrunggurra*	*gurrunggurra*	*biyanaba*	*birranbirra*	*birranbirra*
Limilngan Pre	*nginy-*	*a-rr-*	*a-rr-*	*w-*	*i-rr-*	*i-rr-*
Limilngan Pro	*nginyi*	*wunguyi*	*wunguyi*			
Malak-malak Pre	*nV(n)-*	*nu(ng)gV(-rrV)-*	*nu(ng)gV(-rrV)-*	*yV(n)-* (M) *nV(n)-* (F)	*wV(-rrV)-*	*wV(-rrV)-*
Malak-malak Pro	*wangarri*	*nugut*	*nugut*	*yöndön* (M) *nöndön* (F)	*wörröndön*	*wörröndön*
Mangarrayi Pref	*nya-*	*nu-rr-*	*rla-*	*Ø-*	*wu-rr-* *bu-rr* (N-)	*wu-rla* *ba-* (N-)
Mangarrayi Pron	*nyanggi*	*nu-rr*	*nu-rla*			
Marra Pre	*ni-*	*nu-rru-*	*nu-wu-*	*wa-* (C_) *ga-*	*wa-rri-* *ba-rri-* (C_)	*wa-la-* *ba-la-* (C_)
Marra Pro	*niya-rra*	*nu-rru-nya*	*nu-rr-wu-nya*	*nangga-yi* (M) *nga-yi* (F)	*wu-rru-yi*	*wu-lu-yi*
Marramaninjsji Pre	*gini-*	*nV-*	*nV-*	*gV-*	*fV-*	*fV-*

	2MIN	2UA	2A	3MIN	3UA	3A
Marramaninjsji Pro	*nany*	*ne-di-fi*	*ne-di*	*nang* (M) *ngiya* (F)	*winj-fi*	*winji*
Marringarr Pre	*g/ngVni-*	*nV-*	*nV-*	*gV-*	*fi-(rri-)*	*fi-(rri-)*
Marringarr Pro	*niɯ*	*na-di*	*ne-rr*	*nang* (M), *nga* (F)	*niwiɯ*	*niwi-rr*
Marrithiyel Pre	*(gi)nV-*	*(gi)nV-*	*(gi)nV-*	*gV-*	*gu- ~ firri-*	*gu- ~ firri-*
Marrithiyel Pro	*nany*	*na-di*	*na-di*	*nang* (M) *ngiya* (F)	*we-di*	*we-di*
Matngele Pre	*any(ju)-*	*nunggu-rru-*	*nunggu-rru-*	*Ø- ~ b/gu-*	*b/gu-rru-*	*b/gu-rru-*
Matngele Pro	*wangarri*	*nunggurr*	*nunggurr*	*gurna*	*gurna(wurr)*	*gurna(wurr)*
Maung Pre	*an-*	*gu-rr-*	*gu-rr-*	*i-* (M) *iny-* (F)	*aw(u)-*	*aw(u)-*, *bu-* after N in transitive forms
Maung Pro	*nuyi*	*nuwu-rri*	*nuwu-rri*	*yanad* (M) *in-yanad* (F)	*wenad*	*wenad*
Miriwung Pre	*n*(V)-	*na-rr*(V)-	*na-rr*(V)-	*g*(V)- (M) *ny*(V)- (F)	*be-rr*(V)-	*be-rr*(V)-
Miriwung Pro	*nyengu*	*nengge-rra-bu*	*nengge-rru*	*nawu* (M) *ngalu* (F)	*bu-rru-bu*	*bu-rru*
Murrinh-patha Pre	*th*V-	*nV-*	*nV-*		*pV- ~ kV-*	*pV- ~ kV-*
Murrinh-patha Pro	*ɯiɯi*	*na-nku*	*na-nki*	*nukunu* (M) *nigunu* (F)	*piguna*	*pigunu*
Na-kara Pre	*nya-*	*nu-na-* (M) *nu-rr(a)-* (F)	*nu-rrba-*	*Ø-* (M) *gi-* (F)	*ba-na-* (M) *ba-rr(a)-* (F)	*(ba-)rrba-*
Na-kara Pro	*nyeya-pa*	*nu-naya-pa* (M) *na-ngayaga-pa* (F)	*nu-perra-pa*	*naga-pa* (M) *ngiyaga-pa* (F)	*ba-naya-pa* (M) *ba-ngiyaga-pa* (F)	*bɯ-perra-pa*
Ndjebbana Pref	*ngana(ga)-*	*ni/a-rri-* (NF) *na-rra- -nya* (F)	*na-rru-*	*ga-* (NF) *ya-* (F)	*bi/a-rri-* (NF) *ba-rru(ga)- ~ barra- -nya* (F)	*bɯ-rru-*
Ndjebbana Pron	*nyinyja-pa*	*ni-rri-ge-pa* (M) *na-rra-ya-pa-nya* (F)	*nu-rra-pa*	*na-ge-pa* (M) *nga-ya-pa* (F)	*bi-rri-ge-pa* (M) *ba-rra-ya-pa-nya* (F)	*bɯ-rra-ya-pa*
Ngalakan Pre	*nginy-*	*nu-rru-*	*nu-rru-*	*Ø-*	*bu-rru-*	*bu-rru-*

	2MIN	2UA	2A	3MIN	3UA	3A
Ngalakan Pro	*nginy-jaq*	*nu-rr-kaq*	*nu-rr-kaq*	*niny-jaq* (M) *jiny-jaq* (F)	*bu-rr-kaq*	*bu-rr-kaq*
Ngaliwurru Pre	*na-*	*gu-ny-*	*gu-rr-*	*ga-*	*bu-ny-*	*bu-rr-*
Ngaliwurru Pro	*nami*	*gu-rri-nyi*	*gu-rri*	*ji*	*bu-rri-nyi*	*bu-rri*
Ngandi Pre	*nu-*	*na-rri-* (M)	*na-rr-*	*ni-* (M), *na-* (F)	*ba-rri-* (M)	*ba-*
Ngandi Pro	*nugan*	*nuka-rni* (M)	*nukarr*	*ni-wan* (M) *na-wan* (F)	*bowo-rni* (M)	*ba-wan*
Ngan.gityemerri Pre	*y*V-	*y*V-*d/rr*(V)-	*y*V-*d/rr*(V)-		*w*V-*d/rr*(V)-	*w*V-*d/rr*(V)-
Ngan.gityemerri Pro	*nyinyi*	*na-rrgu* ~ *na-garri*	*na-gurr*	*nem* (M) *ngayim* (F)	*wurru-ke* ~ *wirri-ke*	*wurru-m* ~ *wirri-m*
Nungali Pre	*ngaju-*	*wu-ny-*	*wu-rr-*	*wa-*	*wi-ny-*	*wi-rr-*
Nungali Pro	*ngaminju*	*wu-nygi-yirram*	*wu-rru-mulu*			
Nunggubuyu Pre	*nun-*	*nii-ni-* (M) *nii-ngi-* (F)	*nu-rru-*	*ni-* (M) *ngi-* (F)	*wi-ni-* (M) *(w)a-ngi* (F) *b* after nasals in transitive forms	*wu-rru-*, *b* after nasals in transitive forms
Nunggubuyu Pro	*nagang*	*nu-gu-rni* (M) *nu-gu-rngi* (F)	*nu-gu-rru*	*ni-ga* (M) *ngi-ga* (F)	*wu-gu-rni* (M) *wu-gu-rngi* (F)	*wu-gu-rru*
Nyigina Pre	*mi-*	*gu-rr-*	*gu-rr-*	*yi-* ~ *wa-*	*yi*-TNS-*rr-* ~ *wa*-TNS-*rr-*	*yi*-TNS-*rr-* ~ *wa*-TNS-*rr-*
Nyigina Pro	*juwa*	*gu-rr-ga-mirri*	*gu-rr-ga*	*ginya*	*yi-rr-ga-mirri*	*yi-rr-ga*
Patjtjamalh Pre	*ny*V-	*nye-rr-*	*nye-rr-*	*y*V- (M) *yVny-/yVtj-* (F)	*ba-rr-*	*ba-rr-*
Patjtjamalh Pro	*gane*	*nawa-rra*	*nawa-rra*	*ja-muyic* (M) *jeny-muyic* (F)	*bö-rra*	*bö-rra*
Rembarrnga Pre	*nginy-*	*na-rra-*	*na-rra-*	Ø-, *ga-* (NP)	*ba-rra-*	*ba-rra-*
Rembarrnga Pro	*danda*	*na-gunda-parraq*	*na-gunda*	*niq-danda* (M) *ngaciq-danda* ~ *ngayiq-danda* (F)	*bu-nda-parraq*	*bu-nda*
Rembarrnga Dative Pro	*gœ*	*nago-rr-parraq*	*nago-rr-œ*	*nawœ* (M) *ngadœ* (F)	*ba-rr-parraq*	*ba-rr-œ*
Ungarinyin Pref	*nyin-*	*gu-rr-*	*gu-rr-*	*a-* (M), *nya-* (F)	*bu-rr-*	*bu-rr-*

	2MIN	2UA	2A	3MIN	3UA	3A
Ungarinyin Pron	*nyangan*	*nu-rr-un*	*nu-rr-un*			
Tiwi Pre	*nyi-* (NP), *ji-* (P)	*ngi-ndi-*	*ngi-ndi-*	*a-* (MNP), *a-mbi-* (FNP) *yi-* (MP), *ji-* (FP)	*wu-* (NP) *bi-(rri-)* (P)	*wu-* (NP) *bi-(rri-)* (P)
Tiwi Pro	*nginyja*	*nuwa*	*nuwa*	*ngarra* (M) *nyirra* (F)	*wuda*	*wuda*
Wagiman Pre	*ngi-*	*ngu-*	*ngu-*	Ø-, *ga-* (NP)	*ba-*	*ba-*
Wagiman Pro	*ngigun*	*ngogo*	*ngogo*		*boko*	*boko*
Wardaman Pre	*yi-*	*nu-*	*nu-*	Ø-	(*ya-*)*wu-rr-* , *b* after nasals in transitive forms	(*ya-*)*wu-rr-* *b* after nasals in transitive forms
Wardaman Pro	*yinyang*	*nurrug(-guya)*	*nurrug*			
Warndarrang Pref	*nyi-*	*ngu-d-* ~ *ngu-rri-*	*ngu-du-*	(*g*)*a-*	(*g*)*a-rr/d-*	(*g*)*a-la-*
Warndarrang Pro	*nyinyu*	*ngu-rra-yi*	*ngu-d-burr*	*ni-wa* (M) *ngi-wa* (F)	*yi/wu-rra-yi*	*wu-la-yi*
Warray Pre	*an-*	*a-*	*a-*	Ø-, *ga-* (NP)	*ba-*	*ba-*
Warray Pro	*nguny*	*ni-girring*	*ni-girring*	*-garla*	*bi-girring*	*bi-girring*
Warrgat Pre	*n*V-	*ga-rra-*	*ga-rra-*	Ø-	*f*V-*rr*V-	*f*V-*rr*V-
Warrgat Pro	*nina*	*ni-ja-mada*	*ni-ja*	*nanguny* (M) *nganguny* (F)	*wi-ja-mada*	*wi-ja*
Worora Pre	*ngun-*	*nyi-rr-*	*nyi-rr-*	*a-* (M), *nyi*N- ~ *nya*N- (F)	*gaa-rr-*	*gaa-rr-*
Worora Pro	*ngunju*	*nyi-rre-rnrdu*	*nyi-rri*	*awa* (M) *nyangga* (F)	*arrga*	*arrga*
Yawuru Pre	*mi-*	*gu*-TNS-*rr-*	*gu*-TNS-*rr-*	*wa-*	*i*-TNS-*rr-*	*i*-TNS-*rr-*
Yawuru Pro	*juyu*	*gu-rr-garda*	*gu-rr-yirr*	*ginyangga*	*yi-rr-garda*	*gangajun(u)*
Yukulta Pro	*nyingga*	*gi-rra*	*gi-l-da*	*niya*	*bi-rra*	*bi-l-da*

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